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ABSTRACT

Presented for classroom teachers, program supervisors, and resource specialists is a curriculum guide in the areas of home management and career preparation for adolescents with special needs. Introductory information includes explanations of the format and use of the guide and suggestions for evaluating student performance. Guidelines provided for 26 curriculum units consist of statements of concepts and skills to be acquired (instructional objectives) as well as listings of projects to motivate learning, activities to focus instruction, and related instructional materials. Included are the following curriculum units: mental health, health care, body care, first aid, marriage and family adjustment, food and nutrition, sewing, child care, basic house maintenance, small animal care, laundering, wooodworking, carpentry, practical electricity, drafting, metal working, gas engine operation, furniture restoration, electronics assembly, automotive mechanics, waiter and waitress training, gardening, and home care and custodial skills. (LS)

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Final Report

Project No. 5-0125

Contract No. OEG-0-71-4147 (603)

THE VERMONT GUIDE FOR TEACHING ADOLESCENTS WITH SPECIAL NEEDS

Compiled by

William E. Halloran, Ph.D.
Project Director

Marc E. Hull, M.Ed.
Associate Director and Editor

Fay H. Charles, B.S.
Workshop Coordinator

Albert Lampe, Ed.D.
Project Consultant

Christine A. Morgan, M.Ed.
Publication Coordinator

August 1975

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FOREWORD

The Vermont Guide for Teaching Adolescents with Special Needs was put together in response to the urgent demand for curriculum development in the areas of home management and career preparation for special needs students. In spite of the urgency associated with its development however, the Guide was not allowed to become a work of haste as either a quick review or an indepth study of the content will show. To the contrary, many months of deliberate and untiring labor on the part of dedicated and knowledgeable professionals preceded its publication. The Guide was put together during a series of summer workshops conducted over a four year period by the Vocational Education and Technology Department of the University of Vermont. Altogether, more than 40 teachers contributed material to the Guide.

Funds for the development of the Guide came from three principal sources: the Bureau of Education for the Handicapped, (U.S.O.E.), the Division of Special Education and Pupil Personnel Services, and the Division of Vocational Education of the Vermont State Department of Education.

In its present form, the Guide is designed primarily to be used as a teaching resource--a reference for structuring and evaluating programs of instruction, a template for tracing out daily lesson plans, a guide for selecting and developing instructional materials, and a standard for evaluating the performance of students. Should the Guide be used for any or for all of these purposes, it will be highly gratifying to those involved in its development and dissemination. The contributors to the Guide and its principal compilers take great pleasure in being able to offer the publication to classroom teachers, program supervisors, and resource specialists who are trying to establish successful programs for adolescents with special needs.

William E. Halloran

William E. Halloran, Project Director*
Special Education and Pupil Personnel Services
Vermont Department of Education

Marc E. Hull

Marc E. Hull, Project Associate Director and Editor*
Department of Vocational Education and Technology
University of Vermont

---

*William Halloran is now employed in the Aid to the States Branch of the Bureau of Education for the Handicapped (U.S.O.E.).

*Marc Hull is now a Research Associate and Educational Writer in the Office of the Dean, College of Education, Texas A&M University.

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Recognition for the success of the project must also be given to Mr. Arthur Ericson, Director of the Division of Vocational Education. His conscientious collaboration with the Division of Special Education in matters relating to the education of students with special needs has been a key factor in the success of Vermont's special needs programs at the secondary level.

The project is likewise indebted to another outstanding vocational educator, Dr. Gerald R. Fuller, Chairman of the Vocational Education and Technology Department of the University of Vermont. Dr. Fuller provided valuable counsel and dependable support during the four years in which the Guide was put together.

Finally, a review of the contents of the Guide makes it readily apparent that the publication is the outcome of the cooperation and contributions of many individuals, most of whom are highly-skilled classroom teachers who possess a wealth of experience in teaching adolescents with special needs. It is to these individuals, the principal contributors to the Guide that the project staff is most indebted:

Richard C. Ahern	Essex Educational Center
Charles H. Ash	Burlington High School
Scott W. Baldwin	Middlebury Union High School
Louis J. Beauchamp	Essex Educational Center
Carol Kay Bergedick	Middlebury Union High School
Robert G. Brunnelle	Essex Educational Center
Michael F. Cain	Hartford High School
Carol Cantwell	Brattlebors Union High School
Mondo Campbell	Vermont State Department of Education
Fay H. Charles	Vermont State Department of Education
Nancy S. Corp	Lamoille Union High School
Robert L. Day	Essex Educational Center
Herbert H. Draper	Rutland Area Vocational Center
Diane P. Fairbanks	Burlington High School
Robert G. Hegeman	Essex Educational Center
Mary L. Hill	Essex Educational Center
Bessie M. Horan	St. Albans High School
Patricia Irving	Burlington High School
George I. Kalil	Rutland Area Vocational Center
Brian M. S. Lack	Barre Vocational Center
Bernard Larivee	Rutland Area Vocational Center
George Lawrence	Hartford High School
Richard H. Lee	Hartford High School
George F. Lewis	Oxbow Union High School
Ernest L. Levesque	Burlington High School
Arthur M. Liskowsky	St. Albans High School
Carol A. Livingston	State of Ohio
John P. Marshall	Springfield High School
Marlin C. Martin	Department of Education (Intern)
Maynard J. Maville	Hartford High School
Gary B. McKenney	Springfield High School
George Matalious	Rutland Area Vocational Center
Helmut B. Meyer	Bennington High School
Kenneth C. Mitchell	Essex Educational Center
Barbara A. Moore	Rutland Area Vocational Center
Joel O. Moore	Oxbow Union High School
Christine A. Morgan	Essex Educational Center
Harold E. Moulton	Mt. Mansfield High School
Richard C. St. Peter	Middlebury Union High School
Richard K. Tyler	Barre Vocational Center
Lorraine J. Wood	Missisquoi Union High School
Howard L. Zach	Rutland Area Vocational Center

Finally, the compilers want to express their appreciation for the excellent typing services of Mrs. Joan Barry and Mrs. Shirlee Fallesen.

It was an enriching professional experience for everyone who shared in the development of the Guide.

INTRODUCTION

The Guide is comprised of some twenty six curriculum units, each of which consists of statements of concepts and skills to be acquired (commonly referred to as instructional objectives) as well as listings of projects to motivate learning, activities to focus instruction, and instructional materials which convey related and supplemental information.

Statements of Skills to be Learned

The compilers of the Guide elected to depart from the format which Popham, Mager, and others have suggested for statements of skills to be learned. This is to say that some of the customary embellishments of the Popham- and Mager-type objectives (the statements of conditions under which a behavior is to occur and the criteria by which a behavior is to be evaluated) have intentionally been omitted from most of the statements of skills to be learned. The result of this deliberate omission is a more readable and more flexible set of behavioral objectives. It should be pointed out, however, that selected objectives (principally those representing behaviors of a global or terminal nature) have been stated in the manner suggested by Popham and Mager. Also, evaluation criteria have been included for skills which must be performed to specified criteria because of considerations for safety or conservation of resources.

The statements of skills to be learned often focus on minute behaviors. Contributors to the Guide were specifically requested to break down each operation or skill into its smallest sub-tasks even though the listing of the sub-tasks may have appeared to the authors to be redundant in terms of classroom instruction. The purpose of insisting on an indepth task analysis was to emphasize the need for the deliberate and systematic presentation of all tasks which comprise the skills to be learned.

Projects and Motivational Activities

Considerable discussion preceded the decision to incorporate listings of projects and motivational activities into the various units. The focus of the discussion was not the merit of projects per se; it was the adverse effects of projects when their completion takes precedence over the acquisition of skills. The project staff was in complete agreement that the skills which one acquires through the completion of projects say, for example, building a book shelf (the skills in this instance being to saw, hammer, fasten, sand, paint and measure) are of much greater importance than the completion of the projects in and of themselves, as implied in the familiar proverb "give a lad a fish, and he will eat for a day; teach a lad to fish, and he will eat for a lifetime."

Prevocational Emphasis

Whether or not students with special needs enroll in regular vocational programs, they should if at all possible be involved in a sufficient quantity and variety of prevocational and exploratory experiences to enable the school to make a comprehensive assessment of their occupational interests and abilities. In recent years, the importance of prevocational training for students with special needs has become widely recognized and accounts, in part, for the strong prevocational emphasis of the Guide. It follows, therefore, that when the Guide is used in prevocational classes, it should be used in conjunction with course outlines of the vocational programs in which the students may subsequently enroll.

It is a well established fact that instructors in regular programs are sometimes reluctant or even openly opposed to the placement of handicapped students into regular programs. This reluctance can often be dispelled, however, by having the teachers note the accomplishments that students with special needs have made in prevocational programs. For reasons we do not altogether understand, the combination of compelling interest and the determination to succeed make it possible for many students with special needs to be successfully placed in regular programs, and the Guide can hopefully be used to support or be the basis for these successful placements.

Approaches to the Evaluation of Student Performance

Ideally the outcome of all instruction is "learning to mastery." Realistically, however, students seldom master all the skills and concepts presented during a unit of instruction. For this reason, it has become a custom to evaluate the extent to which learning takes place in programs of instruction. In terms of evaluation, F. Coit Butler, the author of Instructional Systems Development for Vocational and Technical Training, lists five kinds of assessment activities which should accompany instruction:

1. "Before-lesson assessment that is diagnostic, prescriptive, and directive in nature; thus allowing the student to concentrate on areas of weakness or perhaps to by-pass the lesson entirely.
2. Immediate and continuous within-lesson assessment to furnish the student the feedback that is an integral part of the learning process itself.
3. Immediate and continuous within-lesson assessment to confirm attainment to each capability before proceeding to the next, because each learning experience systematically builds on a preceding learned capability.
4. End-of-lesson and end-of-unit assessment to predict the capacity of students to proceed to related or advanced lessons and units.
5. End-of-course assessment to predict transfer of knowledge and skill to on-the-job situations, and to predict performance in related or more advanced courses."

The contents of the Guide can be used in the performance of each evaluation activity described above with the constraint that the evaluator himself must determine the quality of a particular performance. When making qualitative evaluations one may wish to consider the following items:

Measurable Dimensions of a Performance *

1. Speed. One of the more salient characteristics of a performance is the speed with which it is completed. Although speed can be easily evaluated, under no circumstances should it be allowed to override considerations for personal safety or quality of performance. Since to some extent speed is essential to the satisfactory performance of jobs, it is considered by many to be an important factor in determining job readiness.

2. Accuracy. Another commonly evaluated characteristic of a performance in progress is the accuracy of the performance. When a performance is to be executed according to an explicit set of standards, accuracy is commonly measured in terms of error counts or deviations from a set of prescribed standards. Precise measurement frequently requires that accuracy be broken down into some of its subdimensions, two of which are listed below:

a. Procedural errors. This type of error requires the existence of only one correct sequence of steps or one pattern to follow in carrying out a performance as is the case with procedures which have been formalized or standardized. Usually the given procedure has been established on the basis of experience and general acceptance with deviations from the standard procedure counted as errors.

b. Errors in following instructions. Deviations from clearly communicated instructions indicate a degree of noncompliance with the requirements of a task. It should be determined whether errors of this type are due to the inability to carry out instructions, or to inadvertent mistakes, hence a mis-

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* This section based on Bradfield, J. M. & H. S. Moredock. Measurement and Evaluation in Education. New York: Macmillan Company, 1957 pp. 330 - 331

understanding of the task at hand.

3. Discrimination. Discrimination involves the proper selection and use of tools, equipment, and movements to carry out a performance. It is one of the important dimensions to be considered in woodworking, electricity, auto mechanics, and crafts where numerous tools or pieces of equipment are used and where the article being made or repaired must comply with rigid standards of craftsmanship.

4. Economy of effort. Here we look for the amount of effective motion in contrast to the amount of "lost motion" or trial-and error behavior. This aspect of performance is often related to speed since the greater the economy of effort, the greater will be the speed of the performance.

5. Timing. This dimension deals with the rate and emphasis of movement of complex motor performances. The dimension of "timing" is likewise involved in tasks which require team effort.

6. Intensity. The outward manifestations of this dimension would be the force or amplitude of the movements involved in the performance of a particular task. It is possible that for any task there may be too much force exhibited or too little, and measurement will, of necessity, be in terms of deviation in either direction from some optimum degree of intensity.

7. Coherency. This dimension applies to performances in which there is no single correct procedure or sequence of steps for carrying out the tasks involved. In such a case it would be impossible to measure each performance task in terms of adherence to an ideal procedure. Consequently, actions must be judged on the basis of their internal consistency or their mutual appropriateness.

The various dimensions of performances which have been described above can be rendered into an elaborate evaluation matrix. Although the use of such a matrix would normally be too time consuming for continuous classroom application, it could be used for an occasional indepth analysis of student performances. In the matrix, the performance tasks are listed in a vertical column to the left and the evaluation factors are listed horizontally along the top. Letters such as S (superior), G (good), F (fair), P (poor) may be used to denote the qualitative levels of performance, or numbers having equal interval values can be used to denote the quality of performances in which case the columns can be totaled for comparative purposes.

Figure 1

Evaluation Matrix

NAME OF STUDENT:______________________________

SUBJECT:____________________________________

PROJECT:____________________________________

DATE:_______________________________________

EVALUATOR:__________________________________

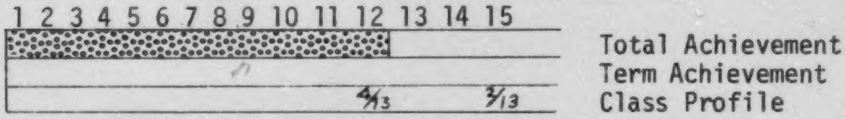
PERFORMANCE TASK	general construction	selection of materials	speed	accuracy	selection of tools	regard for safety	economy of effort	degree of independence	timing	intensity	coherency	concern for texture, color, style, flavor, etc.	appearance or general construction	cleanliness	conformity to directions	general performance	cumulative score
1																	
2																	
3																	

Recording the Achievement of Individuals

A method for recording the progress of individual students is shown in Figure 2. As a student completes the prescribed learning tasks, his or her achievement is recorded by blocking in portions of the "Total Achievement" column in the same manner as one blocks in a horizontal bar graph to show growth. The "Term Achievement" column is blocked in when a student progresses in the same area of study for more than one reporting period. In the column labeled "Class Profile" is entered the student's relative standing in terms of total class achievement. For example, if four students in a class of thirteen have completed twelve consecutive tasks, an entry is made under objective 12 as depicted in Figure 2. The example noted below indicates that two out of thirteen students completed tasks 1-15. From this information, one can readily assess the relative standing of a particular student which may or may not be useful information. One must note, however, that the class profile can be used only when objectives are completed in the sequence given in the manual--for which there is no real necessity. Recording forms can also be used to list the projects completed for a unit of instruction. Needless to say, when evaluation forms become part of a student's cumulative records, they should be as complete and as accurate as possible.

Figure 2

Apply exterior finishes



In addition to the learning tasks above, the student completed the following projects:

Workmanship Rated:

1 ______________ Very Good ( ) Good ( ) Fair ( ) Not Acceptable ( )

2 ______________ Very Good ( ) Good ( ) Fair ( ) Not Acceptable ( )

3 ______________ Very Good ( ) Good ( ) Fair ( ) Not Acceptable ( )

Special Comments:

Other types of assessment forms may be developed for use with this manual. One frequently used observation form (see Figure 3) records several gradations of performance. In this form the "yes-no" or "occurrence-nonoccurrence" responses of Figure 2 are replaced by descriptive levels or performance ratings. In Figure 2, spaces were blocked-in to signify completion of a learning task, but in the rating scale a performance can be evaluated in terms of degrees of excellence or acceptability.

Yet another type of evaluation form that is used to record individual performances is the anecdotal record. Anecdotal records are particularly useful when a performance has no clearly defined dimensions by which it can be evaluated.

Figure 3

A Qualitative Evaluation Form

Action Observed	Unsatisfactory	Partly Satisfactory	Satisfactory
I. Preparing surface 1. Checks dryness			
2. Removes dust, using suitable cloth			
3. Removes grease or wax			

Recording the Achievement of Groups

Certain teachers prefer to use group progress charts rather than to become involved in the paper-work required for recording the progress of individual class members. Several adaptations of group progress charts are available for recording student progress. In addition to a listing of class participants, group progress charts may list operations, instructional content, or projects to be completed. Generally, group charts are prominently displayed in the classroom and are updated whenever students acquire new skills. Because of the public display, however, concern is sometimes expressed over the effects that a display has on those whose progress is less than average. A method of recording progress depicted in Figure 4, should eliminate much of this concern, however. Moreover if one's instruction is clear, direct, and appropriate, every properly placed student should make satisfactory progress.

Figure 4

Group Progress Report

COURSE: Metal Trades

HOUR: 3rd. & 4th. Period

GRADE: Senior Level

NO.	Name	Cut Threads on a Lathe	Keyways and Stopcuts on a Shaper	Operate A Surface Grinding Machine	
1.	Edward Batten	B	C	C	
2.	Hoyt Burnard	A	C	C	

Supplement to Figure 4

Some teachers merely record a check mark in the space at the time the topic is covered.

Others draw a diagonal line in the space when the student is present for instruction;

and fill in the top corner when the skill is mastered,

and either the final grade received,

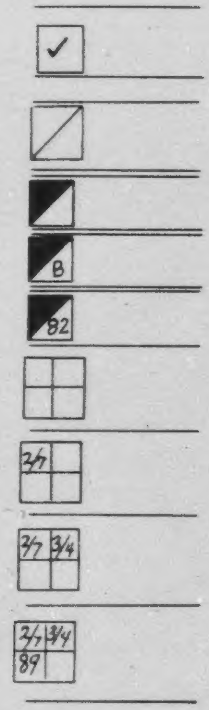
or the points earned, are placed in the bottom triangle.

Some teachers desire even more information, so they divide the space into four parts.

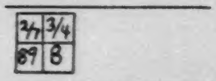
When the student starts the topic, the date is placed in the upper left-hand corner.

When the topic is mastered, the date is placed in the upper right-hand corner.

Qualitative points are recorded in the lower left-hand corner,



and a grade which indicates the level of effort is placed
in the lower right-hand corner.*



The Selection and Development of Instructional Materials

To effectively select, adapt, or develop instructional materials for classroom use, one needs to take into consideration the learning characteristics of the students who will ultimately use the materials. In addition, one needs to consider the objectives of the course, class, unit, or lesson for which the materials are selected. The Guide serves as an effective springboard to the selection or development of instructional materials. Such materials as film loops, video tapes, or slide sets can often be developed locally based on the outline of concepts and skills listed in the Guide.

Summary

The Guide provides the classroom teacher with a valuable tool for monitoring the quality and quantity of learning that occurs in special needs programs. Any feedback received concerning the strengths and weaknesses of the Guide will be carefully considered when revisions are published.

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*Adapted from Teaching Successfully in Industrial Education, G. Harold Silvius, Estell Curry; McKnight & McKnight Publishing Company, Bloomington, Ill.

THE
VERMONT
GUIDE

chapter I

Springboards to Successful Living

Curriculum Units — Page

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First Aid 63
Marriage and Family Adjustment . 73

MENTAL HEALTH

To function as well-adjusted members of society requires a fair measure of personal and social maturity as well as a wholesome personality. The mental health unit focuses on the identification of personality traits and behavioral characteristics which distinguish us as individuals. In addition, numerous factors which contribute to the formation and alteration of our personalities are presented to stimulate small group discussion. Throughout the unit, there is an emphasis on the development of understanding and tolerance toward other people. Before encouraging students to trust others and to reach out to them, we must ensure the development of positive feelings of self-worth which, many would say, are prerequisites to positive mental health as well as physical well-being.

Although a unit of this nature differs in many respects from traditional instructional units, its importance as an area of instruction cannot be overemphasized. The failure of individuals to successfully cope with social situations ranks as a leading factor for involuntary dismissal from employment. For this reason, if for no other, mental health concepts should be deliberately studied by adolescents with special needs.

MOTIVATIONAL ACTIVITIES

1. Enact some of the games suggested in Eric Berne's Transactional Analysis book - I'm OK, You're OK.

2. Invite resource persons to hold class discussions. Suggested resource persons include: psychologists; practicing psychiatrists or interns; mental health counselors; counselors for mental hospitals, prisons, and sanitariums; social director of nursing home or similar institution; Dale Carnegy instructor.

3. Arrange for students to do volunteer services in nursing home, senior citizen's center, or other community agency.

4. Make holiday baskets for the needy.

5. Develop checklist for friendliness.

6. List and discuss personal qualities and characteristics which are liked and disliked.

7. Prepare gifts for children in orphanages, mental institutions, or state schools.

8. Stage a hypothetical personality contest using a checklist of traits and a point system for their evaluation.

MENTAL HEALTH RESOURCES

BOOKS

Craig, H. T. Thresholds to adult living. Peoria, Ill.: Charles A Bennett Co., Inc., 1962.

English, S. L., & Pearson, G. H. Emotional problems of living (3rd ed.). New York: W. W. Norton & Co., Inc., 1963.

Sugarman, D., & Hockstein, R. The seventeen guide to knowing yourself. New York: Macmillan Co.

Trenkle, C. You. 324 First Street, Liverpool, New York 13088: Frank E. Richards, 1966.

Williams, M. M., & Kane, I. On becoming a woman. 1 Dag Hammarstjold Plaza, New York, New York 10017: Dell Publishers Co., Inc.

TEXTS/WORKBOOKS

Cosgrove, M., & Unruh, I. Discovering yourself. 259 East Erie Street, Chicago, Illinois 60611: Science Research Associates, Inc., 1969.

Goltry, M. Alike but different: Learning trends. 175 Fifth Avenue, New York, New York 10010: Globe Book Company, Inc., 1974.

Harrison, P. A. Getting it together: A psychology book for today's problems. 175 Fifth Avenue, New York, New York 10010: Globe Book Company, Inc., 1974.

PAMPHLETS

Source: Human Relations Program, The Connecticut Mutual Life Insurance Co., 140 Garden Street, Hartford, Conn.

The worry go-round.
Growing pains.

Source: National Dairy Council, Chicago, Illinois 60606.

My reflections.

Source: Director of Education Services, The National Association for Mental Health, 1800 North Kent Street, Rosslyn, Virginia.

Can mental illness be prevented?
When things go wrong what can you do?

Source: The Hogg Foundation for Mental Health, Publications Division, Will C. Hogg Building, University of Texas, Austin, Texas 78712.

What is normal?

Source: Community Health Affairs, Metropolitan Life Insurance Co., 1 Madison Avenue, New York, New York 10010.

Teacher leadership on developing mental health values.

Source: American Federation of Labor and Congress of Industrial Organizations, Pamphlet Division, 815 16th Street, N.W. Washington, D.C. 20006.

The workers' stake in mental health.

Source: Your Health, Educational Division, Our Baby's First Seven Years, 5841 Maryland Avenue, Chicago, Illinois 60637.

Your self is showing.

FILMSTRIPS

Source: Eye Gate House, Inc., 146-01 Archer Avenue, Jamaica, New York 11435.

Billy the Bully.
Sarah is Shy.
Greedy Grace.

FILMS

Source: May be borrowed from local Planned Parenthood Association.

Trying times.

Source: American Educational Films, Post Office Box 5001, Beverly Hills, California 90210.

Depression, blahs, blues, better days.

MENTAL HEALTH

Terminal Performance Objective

After completing prescribed instructional activities, the student will be able to: (1) describe five positive and five negative personality traits that influence one's ability to obtain employment and remain employed, (2) describe the importance of understanding others, and (3) describe two sources of free or inexpensive mental health counseling. Responses must meet the criterion set by the course instructor.

I. The Self-Concept

1. Identify the following personality traits in terms of expressing one's self-concept:

Positive

a) easy going
b) considerate
c) softhearted
d) lovable
e) jolly
f) unselfish
g) kind
h) conscientious
i) friendly
j) trustworthy
k) normal
l) self-confident
m) nice guy

Negative

n) fussy
o) confused
p) hardheaded
q) moody
r) anxious
s) mischievous
t) pleasure-seeking
u) selfish
v) stupid
w) inadequate
x) incapable
y) unwanted
z) unloved

2. Discuss such statements as:

a) I must always tell the truth
b) I am not afraid to be myself
c) I can do anything that doesn't hurt someone else
d) Anger should always be avoided
e) I consider other's needs as important as my own
f) I accept my weaknesses
g) I get angry when people criticize me
h) I want people to appreciate whatever I do
i) I am afraid to make mistakes
j) I am afraid to be called "stupid"
k) I am afraid to "stick my neck out"

   l) I can cope with the ups and downs of life
   m) I fear failure
   n) I feel inadequate
   o) I feel people think I'm stupid
   p) I like to say what I feel
   q) Silence is the best policy
   r) Sorrow is to be avoided whenever possible
   s) Happiness is to be sought above everything else
   t) You should please others only when they do something for you in return
   u) I blame my parents for a lot of my troubles
   v) It is best to be yourself
   w) I daydream a lot
   x) It is wrong to cry, especially for men
   y) Boys should be tough, girls should be tender
   z) You can't really trust people
   aa) If people don't like me, that's their problem

3. State the conditions which lead a developing individual to value himself and to regard himself as an object of worth:

   a) parental warmth
   b) respectful treatment and acceptance from others
   c) clearly defined limits of right and wrong
   d) a friendly environment
   e) a balance between dependence and independence

II. Understanding Others

1. Identify and discuss personal characteristics which differ among persons:

   a) personal needs, ambitions
   b) personalities
   c) moods, emotions
   d) looks, appearance
   e) abilities, talents, intelligence
   f) tastes, likes, and dislikes

2. Describe various emotions and how these emotions affect one's behavior.

   a) sadness, sorrow, depression
   b) loneliness
   c) hate, anger, bitterness
   d) fear, anxiety
   e) love
   f) sobriety
   g) happiness, contentment, peace
   h) jealousy

3. Discuss such basic emotional needs as the need for:

    a) love
    b) acceptance
    c) achievement
    d) recognition

4. Discuss the possible consequences when an individual's basic emotional needs are unfulfilled:

    a) the individual is unloved and may fail to learn to love others
    b) the individual is unaccepted and may refuse to trust others
    c) the individual feels like he hasn't achieved and may lose the will to achieve
    d) the individual isn't recognized and may become antisocial

5. Discuss how some physical illnesses are conditioned by emotional conflicts.

    a) digestive problems
    b) ulcers
    c) headaches
    d) nausea
    e) neurosis

6. Discuss nervousness and anxiety in terms of their:

    a) definitions
    b) causes
    c) types
    d) severity (normal versus severe)
    e) cures and/or control

7. Discuss normal levels of anxiety and how they help us to be conscientious and even to excel.

8. Discuss how severe anxiety interferes with normal living routines.

9. Discuss some everyday circumstances which produce stress.

    a) financial worries
    b) marital problems
    c) conflicts in personal relationships with peers, the opposite sex, authorities
    d) job insecurities
    e) unemployment
    f) loss of loved ones
    g) changes in environment
    h) pregnancy and responsibilities of child rearing
    i) difficulties in school

III. Understanding Personality

1. Explain how our speech and actions reflect conscious and unconscious feelings about ourselves.
    - a) facial expressions
    - b) nonverbal expression
    - c) body language
    - d) tone of voice
    - e) manner of speaking
    - f) nervous mannerisms
    - g) constructive action toward oneself or others
2. Discuss the probability of past experiences having a causal relationship to personality traits or behavioral characteristics.
3. Discuss how personality development is affected by:
    - a) family dwelling and surroundings
    - b) parents' education
    - c) religion
    - d) neighborhood
    - e) culture
    - f) geographic location
4. Discuss the concept of maturity and the need for dealing with situations of life in a way appropriate to one's age.
5. Discuss the concept that improving one's behavior indicates that one is maturing.
6. Discuss the concept that part of maturing acceptably is learning to control one's behavior.
7. Discuss the concept that roles and responsibilities change as one matures.
    - a) differentiate between the roles of:
        - 1) child
        - 2) student
        - 3) worker
        - 4) family member
        - 5) spouse
        - 6) parent
8. Discuss the concept that privileges and freedom of choice require responsible decisions.

9. Discuss the concept that working and playing together is part of maturing and requires the development of:
    a) courtesy
    b) thoughtfulness
    c) awareness of the value of others
    d) awareness of the rights of others
    e) self-discipline

10. Discuss the concept of respect for the rights of others:
    a) property rights
    b) right of privacy
    c) right to private opinions
    d) right to private feelings

11. Discuss the importance of consideration and respect for:
    a) older people
    b) people with different cultures, religions and customs
    c) people of other races
    d) people of different economic groups and social classes
    e) people with handicaps

12. Discuss the concept that friendship contributes to a person's well-being.

13. Discuss the benefits of friendships with older people (teachers, ministers, relatives, employers)
    a) offers an opportunity to learn new skills
    b) offers feeling of security, love, acceptance

14. Discuss the benefits of friendships with younger people (younger brothers and sisters, neighbors, younger school children).
    a) offers chance to be an example of proper behavior to others; offers chance to be "looked up to"
    b) offers chance to teach new skills to others
    c) offers acceptance and creates a need for sharing

15. Identify sources of help for solving personality problems.
    a) teachers, school counselors, psychiatrists and psychologists
    b) social welfare and mental health counselors
    c) friends, parents, clergy

IV. Understanding Mental Illness

1. Discuss what happens when one suffers a nervous breakdown.

2. Discuss some indications that an indiviudal may be in danger of having a nervous breakdown.

    a) severe stress
    b) shaky reality checks
    c) preoccupation with a small or large problem
    d) confusion of truth with error
    e) insomnia
    f) hyperactivity
    g) sudden and distinct change in behavior

3. Discuss the treatment of nervous breakdowns.

    a) home care
    b) hospitalization
    c) function of friends, parents, etc.
    d) chemotherapy/counseling/group therapy

4. Identify and describe common types of mental illness.

    a) schizophrenia
    b) paranoia
    c) manic/depressive psychoses
    d) senile dementia
    e) hysteria
    f) neurosthenia
    g) psychopathic personality

5. Explain the differences between the symptoms manifested by a hypochondriac and those of a psychosomatic origin.

    a) psychosomatic symptoms have real physical manifestations
    b) symptoms of hypochondria are largely illusory

6. Discuss what individuals sometimes do to indicate that they are having problems.

7. Discuss the nature and causes of suicide.

8. Explain the steps to take when someone expresses a desire to commit suicide.

V. Understanding the Elderly

1. Discuss the meaning of:
   - a) aging
   - b) senility
   - c) geriatrics

2. Discuss how aging affects us:
   - a) physically
   - b) mentally
   - c) emotionally

3. Discuss the needs of individuals during "old age."
   - a) physical
   - b) psychological
   - c) social
   - d) spiritual

4. Recognize problems, fears and insecurities of older people such as:
   - a) financial worries and problems
   - b) fear of desertion by family
   - c) fear of illness and accidents
   - d) fear of death
   - e) fear of isolation from friends and the world in general
   - f) feelings of uselessness
   - g) lack of self esteem

5. Explain how one could assist an elderly person with spiritual needs.
   - a) contact clergyman
   - b) provide transportation to church or temple
   - c) arrange visits by clergyman
   - d) involve elderly in community activities
   - e) provide communications line to elderly about upcoming activities

6. Encourage and make use of the talents of the elderly.

7. Assist the aging person by encouraging self-care in activities of daily living.
   - a) light housekeeping
   - b) light cooking activities
   - c) shopping
   - d) sewing for themselves or others

- e) maintaining neat appearance
- f) maintaining attractive hair style
- g) making handicrafts
- h) going for rides with family and friends

8. Assist aging person by protecting him from hazards:

    - a) check heating system periodically
    - b) check for frayed electrical cords
    - c) check for overloaded circuits
    - d) check railings for safety
    - e) check walks for ice
    - f) check for faulty electrical appliances
    - g) check for hot water heater
    - h) check all stairways for debris or unsafe steps, railings
    - i) check telephone periodically to make sure it is in working order
    - j) call or visit person to make sure he is all right

9. Identify behavioral traits of very old people.

    - a) sudden mood changes
    - b) need for companionship
    - c) constant reminiscing of past events and people
    - d) talking about illnesses
    - e) forgetfullness
    - f) repetitious and occasionally incoherent speech

10. Discuss how they maintain individuality and independence.

    - a) living in one's own home or apartment
    - b) being economically independent
    - c) deciding on recreational activities
    - d) planning one's own meals
    - e) keeping up friendships and correspondence

11. Helping the elderly maintain bodily functions.

    - a) walk for exercise
    - b) eat regularly and nutritionally
    - c) cautious use of cathartics
    - d) keep a regular daily routine
    - e) bathe regularly
    - f) keep a regular health check-up

VI. Mental Health Facilities

1. Name and discuss resources in the community which provide helpful services in times of emotional crisis.
    - a. Students' geographic area
    - b. Homes for runaways and individuals with drup problems
    - c. Liasons between persons with problems and community resources.

HEALTH CARE

The maintenance of good health is essential for everyone. Poor health and sickness can result in time lost on the job, burdensome medical expenses, and mental anguish. Likewise, sickness can be very frightening if one does not have the knowledge and skills to cope with it. Students with special needs are no exception to the general need for maintaining good health habits, preventing accidents and caring for the sick.

Motivational Activities

1. Survey home for conditions which could cause accidents.
2. Visit a nursing home, hospital or institution.
3. Practice making hospital beds, taking temeratures, recording pulse rates, blood pressure, etc.
4. Create improvised equipment for bed patient (bed table, back rest).
5. Listen to resource person from Narcotics Control Agency or other drug related agency. Show and discuss various types of drugs.
6. Demonstrate a smoking machine.
7. Listen to a nurse or doctor discuss the prevention, care, and cure of infectious diseases.

Demonstrate the use of a fire extinguisher.

HEALTH

BOOKS

Gmur, Fodor, Glass & Langan. Making health decisions. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970.

TEXTS/WORKBOOKS

Be informed series. Be Informed On Drugs (Unit 17). Box 131, Syracuse, New York 13210: New Readers Press, 1971.

Hudson, M. W., & Weaver, A. A. Plans for living: Your guide to health and safety. 6 Davis Drive, Beaumont, California 94002: Fearon Publishers.

Phillips, M. VD: It could happen to you. Box 131, Syracuse, New York 13210: New Readers Press, 1971.

Safe and Sound. 9488 Sara Street, Elk Grove, California 95624: Lawson Book Co.

Udavari, S., & Laible, J. Health, safety and sanitation. Post Office Box 202, Austin, Texas 78767: Steck-Vaughn Company, 1973.

PAMPHLETS

Source: Channing L. Bete Co., Inc., 45 Federal Street, Greenfield, Massachusetts 01301.

Family Life Education Mini Units

4566-1145	About alcohol.
4566-1107	Alcoholism.
4566-1114	Drugs and you.
4566-1122	Drug abuse.
4566-1112	To smoke or not.
4566-1116	About VD
4566-1147	Syphillis and Gonorrhea

Source: Consumer Information, Public Documents Distribution Center, Pueblo Colorado 81009.

Alcohol: Questions and answers.
Headaches.

Typical poisonous plants.
Vaccines: An update.
Answers to most frequently asked questions about drug abuse.
Aspirin
Beward of substituting drug containers.
Diet pills
A primer on medicine

Source: Department of Health Education Communications, Division American Medical Association 535 North Dearborn Street, Chicago, Illinois 60610.

Your health examination.
Family health record.

Source: Inquiries Branch, Health Services & Mental Health Administration, PHS/DHEW, 5600 Fishers Lane, Rockville, Maryland 20852.

What's new on smoking in print and on film.
Inspects that carry disease.
Rubella.
Pinworms.

FILMSTRIPS

Source: Harvest Laboratories, Box 4309, East Providence, Rhode Island 02914.

Safety/Health/Citizenship. (Series A-1400-G)

Source: Tane Press, 2814 Oak Lawn, Dallas, Texas 75219.

Why not marijuana?
Smoking or health.
Alcohol, fun or folly.
Alcohol or highway safety.

Source: Division of Illinois Envelope Company, 400 Bryant Street, Kalamazoo, Michigan 49001.

Practical Drug Series.
Interpretive Education.

FILMS

Source: A.C.I. Films, Inc., 35 W. 45th Street, New York, New York 10036.

VD: Kids get it too.

OTHER

Source: American Educational Films, Post Office Box 5001, Beverly Hills, California 90201.

VD Flip chart (14" x 22" heavy cards, 12 cards and 25 booklets)

HEALTH CARE

Terminal Performance Objective

Upon completion of prescribed learning activities, the student will be able to demonstrate in a simulated situation, the proper home health care of a bed-ridden person as well as discuss the effects of drugs, alcohol, smoking, common infections, diseases, poor sanitation, and lack of regard for safety on one's state of health.

I. Make an Unoccupied Bed

1. Select the proper linens.
2. Place the linen in the order prescribed on the worksheet given on a chair next to bed.
3. Position the bed.
4. Use the proper body mechanics to complete the task of bed making.
5. Lock the bed casters.
6. Unfold the linen properly.
7. Make one side of the bed at a time.
8. Place half of the bottom sheet on the bed with the right side up and the small hem at the base of the bed.
9. Tuck in the bottom sheet, using square corners.
10. Make a square corner at the head of the bed.
11. Tuck the side of the bottom sheet under the mattress from the head of the bed to the end.
12. Place half of the rubber draw sheet on the bed 18" from the head of the bed to the end.
13. Tuck the rubber draw sheet under the mattress.
14. Place half of the cotton draw sheet on the bed directly over the rubber draw sheet with the folded edge toward the head of the bed.

15. Tuck the cotton draw sheet under the mattress.

16. Place half of the second large sheet on the bed with the right side to the mattress, and the large hem even with the head of the bed.

17. Tuck the large sheet under at the base of the bed.

18. Place half of the blanket on the bed 6" from the head of the bed.

19. Tuck the blanket under at the base of the bed.

20. Make a square corner at base of bed with blanket and second sheet.

21. Turn the large hem of sheet over the blanket.

22. Place half of spread on the bed even with the head of bed.

23. Smooth spread and allow it to cover mattress at foot of bed.

24. Make opposite side of the bed following steps Nos. 8 to 22.

25. Place pillow on bed.

26. Pull the pillow case protector over pillow, easing corners of pillow with one hand, holding the pillow in place with elbows.

27. Zip the pillow case or protector

28. Pull pillow case on pillow, using the same method.

29. Position pillow with open end away from door of room.

30. Position the bed for patient entry.

II. Take Temperature with Oral Thermometer

1. Identify an oral thermometer and its parts.

2. Assemble equipment at patient's bedside.

3. Wash hands.

4. Tell patient you are going to take his temperature.

5. Remove thermometer from tray and rinse in cool water.

6. Read thermometer.
7. Shake mercury in thermometer down to 96°.
8. Remove thermometer after three minutes.
9. Read thermometer.
10. Place thermometer in the proper container.
11. Write down the patient's temperature immediately.
12. Check the containers in which thermometers are kept.

III. Take Pulse Count

1. Explain to the patient what is going to be done.
2. Rest the patient's forearm on a flat surface with the palm of the hand down.
3. Locate the pulse on the thumb side of the wrist with the tips of the first three fingers.
4. When the pulse is felt, exert slight pressure with finger tips.
5. Count the number of beats for one minute.
7. Record the pulse rate on the appropriate chart.

IV. Give a Bed Bath

1. Check patient's unit or home for equipment and assemble it conveniently.
    a) identify all of the necessary tools and materials
    b) find the materials by looking in appropriate places
    c) move materials to patient's bedside
2. Explain bed bath procedure to the patient.
    a) assure the patient that assistance will be given if desired
    b) explain the bathing procedure to the patient
3. Prepare and position the patient for bed bath.
    a) give help as necessary in removing patient's night-gown or pajamas

- b) replace the regular blanket with cotton bath blanket
- c) remove pillows which are not needed
- d) screen the patient if necessary
- e) adjust the bed to comfortable position for patient

4. Keep the water comfortably warm and clean throughout the bath.

   - a) ask patient if he would prefer warmer water
   - b) recognize if water is becoming too soiled or cold

5. Prepare the wash cloth for use on the patient by making a washing mitt.

   - a) wet the wash cloth and wring it enough to keep it from dripping
   - b) place washcloth on palm with thumb covering one corner
   - c) wrap washcloth around the palm and fingers, anchoring it with thumb
   - d) after completed wrapping, tuck in the ends at the fingertips
   - e) grasp washcloth tightly on covered hand and use as a mitt

6. Wash the face, neck, and ears.

   - a) place one bath towel on top of bath blanket across patient's chest, folding part of it under the top of the blanket
   - b) place the other bath towel under patient's head to protect pillow
   - c) wash eyes gently with clean water, from the nose outward and using separate corner of wash cloth for each eye
   - d) wash the face, forehead, nose and cheeks using an S-motion around the mouth and chin
   - e) use soap as necessary, keeping bar out of bath water to avoid suds
   - f) use the flat of the hand with long, firm strokes
   - g) rinse in the same order using the same strokes
   - h) wrap corner of face towel around hand to avoid dragging, and then dry the face
   - i) wash the far ear, then the front of the neck, and then the near ear
   - j) rinse and dry neck and ears

7. Wash the chest and abdomen.

    a) cover the patient's chest with towel from pillow (usually only if patient is female)
    b) pull the blanket being protected by other towel, down to abdomen
    c) soap, rinse and dry chest and sides of chest under towel using firm and gentle strokes
    d) pull blanket down to thighs
    e) soap, rinse, and dry abdomen, sides of trunk and upper thighs and pubic area (using long, smooth strokes)
    f) pull up blanket and remove towels

8. Wash the arms and the hands.

    a) place on towel under the patient's near arm and shoulder
    b) place second towel over blanket, folding some of it over blanket edge to keep it dry
    c) soap, rinse and dry the arm (using long, firm strokes)
    d) place the bath basin and soap dish on the towel at the patient's side
    e) wash and rinse the hand in the basin
    f) remove the basin and the soap
    g) dry hand well, especially between fingers
    h) apply hand lotion if necessary, or if patient requests it
    i) remain on same side of bed and repeat procedure with other arm and hand

9. Wash the legs and the feet.

    a) help the patient bend his near knee
    b) fit the blanket snugly around the thigh of the groin on the straight leg
    c) place one towel under the patient's bent leg and foot
    d) tuck other towel in around edge of blanket
    e) place piece of waterproof material under bottom towel
    f) wash, rinse and dry leg (long, firm strokes)
    g) place the soap dish and bath basin on the towel
    h) lift foot into basin
    i) wash and rinse foot well, especially between toes
    j) lift foot, place on towel and remove basin
    k) dry foot (especially between toes)
    l) remove towels and extend leg
    m) wash, rinse, and dry far leg and foot in same manner, working from near side of the bed

10. Wash the back of neck and the back

    a) help patient turn on his far side (with back to the near side of the bed)
    b) change bath water so it is clean and comfortably warm
    c) fold back blanket to uncover patient's back
    d) place one towel over the bottom sheet and pillow and tuck in under patient's shoulder and back
    e) soap, rinse and dry back of patient's neck, back (long, firm strokes)
    f) rub patient's back and have him turn on his back

11. Care for the patient after completing the bath.

    a) help patient put on gown or pajamas
    b) see that patient's hair is arranged and combed neatly
    c) remake or straighten bed if necessary

12. Remove, clean, put away the bath equipment.

    a) gather up all the dirty equipment
    b) wash all dirty equipment in hot water and detergent
    c) rinse and put away equipment in same places it was gathered from

V. Basic Drug Information

1. Distinguish between prescription drugs and non-prescription (over the counter) drugs.

2. Explain how a prescription drug is legally procured.

    a) a type of illness may require specific drug treatment
    b) a competent doctor diagnoses illness and prescribes drugs
    c) the doctor writes the prescription or telephones the prescription into local pharmacy
    d) on presentation of authorized prescription, the pharmacist will fill it

3. Explain drug-related terms:

    a) dosage
    b) expiration date
    c) drug concentration
    d) administration of drug

4. Explain why people should not take drugs which are not prescribed for them.
    a) ill side effects
    b) allergic reaction
    c) overdose - death may result

5. Identify examples of "over the counter drugs".
    a) aspirin
    b) alcohol (rubbing)
    c) calamine lotion
    d) eyedrops
    e) bi-carbonate of soda

6. List articles to be stored in medicine cabinets.
    a) toiletries
    b) prescription drugs
    c) non-prescription drugs
    d) first aid supplies

7. Explain desirable safety features of medicine cabinets.
    a) out of reach of children
    b) common storage of medications (for easy access in need)
    c) lock and key set up to further discourage children

VI. Illegal Drugs

1. Recognize drugs (by name at least) that are not legal to use.
    a) hallucinogenic drugs
    b) marijuana
    c) amphetamines
    d) barbituates
    e) heroin
    f) methodone

2. Explain why certain drugs are illegal.
    a) serious side-effects
        1) hallucinations
        2) illusions
        3) memory loss or lapse
        4) infliction of self injury
        5) infliction of injury to others and their property

  - b) may disrupt normal body chemistry
    - 1) chromosomes

3. Discuss the illegal procurement of drugs.

  - a) "the pusher"
  - b) places of procurement (school, street corner, etc.)
  - c) stealing

4. Explain meaning of drug related terms.

  - a) addiction (physical and psychological)
  - b) narcotics
  - c) withdrawal

5. Discuss how taking legal drugs can become illegal.

  - a) taking medication not prescribed for you
  - b) taking overdose of medication
  - c) giving your prescription to another person with similar ailment

6. Describe how and where to get help when confronted with drug problems.

  - a) hot line
  - b) minister, counselor
  - c) county mental health agency
  - d) doctors and hospitals and related services
  - e) social welfare workers

7. State where to locate toll free number for reporting drug pushers.

VII. Alcohol

1. Explain what alcoholism is.

  - a) illness
  - b) uncontrolled drinking of alcoholic beverages

2. Explain the common long-term effects of excessive drinking.

  - a) malnutrition
  - b) damage to body organs
  - c) delirium tremens - nerve damage
  - d) family disruption, loss of job, crime

3. Discuss reasons for alcoholism.

   a) loneliness
   b) boredom
   c) effects of disease
   d) family or mental problems
   e) job problems
   f) social surroundings
   g) growing up
   h) getting old
   i) relieves tension
   j) as a substitute maturity
   k) "cure" fears
   l) self-expression or achievement

4. Explain how alcohol is only a temporary help for problems, if any.

5. List symptoms of alcoholism.

a) promises to quit drinking	early signs
b) more frequent drinking	
c) increased tolerance	
d) change in personality	
e) mental blackouts	
f) denial or concealment of drinking	mid stage
g) drinking alone in morning	
h) drinking more noticeable, especially at work	
i) difficulty in "feeling good" regardless of amount of consumption	
j) drinking becomes a daily necessity	
k) absenteeism from work	final stage
l) loss of efficiency	
m) obvious uncontrolled drinking	
n) home and financial difficulties	
o) invalidism or death or	
p) slow start to recovery	

6. Explain treatment for alcoholism:

   a) physical - hospitalization, "cure", withdrawal
   b) mental - counseling

7. Explain where to go for help.

   a) doctor
   b) A.A.
   c) hospital

VIII. Smoking

1. Discuss the health hazards related to smoking.

    a) cigarette smokers die younger than non-smokers
    b) cigarette smokers have greater risk of disability from lung chrome bronchitis, emphysima, coronary heart disease, and certain other diseases
    c) risk related to number of cigarettes smoked per day and number of years person has smoked
    d) quitting smoking almost always improves lung functions
    e) quitting reduces risk of illness and death from coronary heart disease, lung cancer, emphysima
    f) risk of death and disability among non-smokers after ten years of non-smoking decreases remarkably

2. Minor factors related to smoking.

    a) leaves bad taste in mouth
    b) gives bad odor to clothes
    c) makes breath foul
    d) gives sluggish feeling
    e) discolors fingers and teeth

IX. Understanding Illness

1. State the various effects of illness.

    a) physiological - pain, discomfort
    b) emotional - irritable, sulky, withdrawn
    c) behavioral - tired, quiet, impatient

2. Describe symptoms of illness.

    a) listlessness
    b) paleness
    c) flushing
    d) spots or rash
    e) red eyes
    f) runny eyes
    g) unusual behavior
    h) loss of appetite

3. Discuss the effects of illness on the family (according to the role of the patient)

    a) wage earner (change of income)
    b) homemaker (changeover of duties required)

c) child (must be patient)
d) elderly person (may become demanding, emotional)

4. Explain the effects of illness on the family according to the type of illness.

    a) acute
    b) long-term
    c) chronic
    d) terminal
    e) communicable
    f) disabling accident

5. Explain the adjustments other family members need to make in their daily routine when one family member is ill.

    a) cooperation in household tasks
    b) positive acceptance of extra responsibility
    c) conscious attempt to maintain a pleasant environment (cheerful, quiet, clean)
    d) make room for the sick person a comfortable, positive place

6. Describe how to prepare for hospitalization.

    a) enquire what will take place
    b) enquire about tentative duration of stay
    c) enquire about costs and arrangements for payment

X. Common Infectious Diseases

1. Name as many common infectious diseases as possible.

    a) athletes foot
    b) chicken pox
    c) measles
    d) hepatitis
    e) influenza
    f) meningitis
    g) mumps
    h) typhoid
    i) German measles
    j) urinary tract infection
    k) gastroenteritis (stomach virus)
    l) common cold

2. Explain in brief, symptoms of illness which may require a doctor's attention.

    a) high fever
    b) rash that persists

   c) chills
   d) slurred vision
   e) dizziness
   f) unusually flushed face
   g) listlessness
   h) persistent cough
   i) difficulty in breathing
   j) convulsions
   k) chest pains

3. Describe how to receive immunization treatment for:

   a) small pox
   b) diphtheria
   c) whooping cough
   d) tetanus
   e) measles
   f) German measles
   g) polio
   h) mumps

4. Name the two most common venereal diseases.

   a) gonorrhea
   b) syphilis

5. Discuss why it is important to know about V.D.

6. Recognize and discuss the basic facts about V.D.

   a) a person can get V.D. at any age
   b) it is found in all areas, among all classes
   c) a person can catch both gonorrhea and syphilis at the same time, unlimited times
   d) no vaccine can provide immunity
   e) people catch it from infected people via sexual intercourse or other forms of skin contact with infected people
   f) people do not catch V.D. from toilet seats, etc. in spite of these myths
   g) personal cleanliness will not prevent V.D. infection
   h) the only way to be sure one has it (or doesn't) is to see a doctor
   i) V.D. can cause irreparable damage to tissues
   j) V.D. can be cured
   k) once in a body, V.D. germs will continue to do damage until treated
   l) V.D. can cause babies to be born blind, defective, or deaf
   m) V.D. is on the increase throughout the United States

7. Explain the V.D. symptoms in men and women.

8. Explain that to cure V.D. one must carefully follow a doctor's orders.

9. Explain importance of helping others to get cured.

XI. Common Health Problems

1. Recognize abscesses and boils (skin infections).

2. Care for abscess or boil.

    a) leave it alone if closed
    b) wait for it to open by itself
    c) cover with a sterile or clean dressing if draining
    d) apply hot packs
    e) do not squeeze
    f) do not pick it with pin or needle unless advised by doctor

3. Care for animal bites.

    a) wash wound with soap and water
    b) locate animal and check records for rabis vaccination
    c) if no records available, confine animal for fourteen days if practical and possible

4. Care for blister.

    a) wash blister area clean
    b) cover with sterile bandage

5. Care for person with chills.

    a) put person to bed
    b) keep person warm
    c) chills may indicate severe illness
    d) call doctor if chills persist

6. Care for common cold.

    a) drink ample amounts of fluid
    b) rest
    c) take aspirin if needed every four hours
    d) obtain medical assistance if complications appear

7. Care for sore throat.

    a) gargle with warm water and salt

b) place cold compresses over throat
c) administer aspirin every four hours if needed (unless allergic to aspirin)
d) call doctor to see if throat culture is necessary

8. Treat bites of bees, wasps and hornets.

a) remove stinger
b) apply paste of baking soda or mud
c) seek medical assistance if individual is allergic to stings

9. Treat earache.

a) apply ice bag or water bottle to affected ear
b) give aspirin for pain
c) if earache persists, see physician

10. Treat person with fever.

a) determine amount of fever by taking temperature
b) put person to bed
c) if temperature is severe (101° +) call doctor

11. Treat a common headache.

a) aspirin
b) rest
c) if headache persists and is severe, see physician

12. Treat heat illness.

a) put person to bed
b) lay person down in cool place
c) give person cool salted water to drink (1 teaspoon salt to 1 quart water)

13. Treat nosebleed.

a) place person in sitting position
b) tilt head slightly back
c) grasp lower end of nose between thumb and index finger
d) press the sides of the nose firmly against the center for five minutes
e) release pressure gradually
f) apply cold cloths or ice
g) plug nostrils with small strip of gauze if bleeding persists
h) call doctor if bleeding continues

14. Treat skin rash.

    a) apply compress soaked in cool soda solution
    b) to relieve itching use 3 teaspoons of baking soda and a glass of water
    c) cover rashes and small pimples generously with paste of bicarbonate of soda
    d) caution person not to rub or scratch area

15. Treat a toothache.

    a) apply cloves or commercial toothache drops on small piece of cotton
    b) pack cotton gently into tooth cavity
    c) repeat two or three times daily
    d) relieve pain with aspirin if needed
    e) see dentist as soon as possible

Call physician if home treatment does not cause rapid improvement in all the above conditions.

XII. Home Sanitation

1. Place household waste and garbage in appropriate containers for later removal, disposal, burning or burial.

2. Demonstrate and discuss how to keep window screens and doors in good condition to exclude disease carrying insects such as flies and mosquitoes.

4. Explain methods for preventing accumulation of litter which entices rats or mice to settle.

5. Explain how to regulate ventilation of rooms to insure an adequate supply of fresh air.

6. Demonstrate how to clean shoes and boots on door mat before entering home, school or other building.

7. Explain how to clean with tool that picks up dust instead of dispersing it into air.

8. Demonstrate how and why to change bed linens.

9. Discuss how to eliminate rats and mice with:

    a) traps
    b) poisons
    c) cleanliness

10. Discuss how to eliminate lice and other insects.

    a) recognize lice
    b) explain dangers associated with lice
        1) transmit certain virus diseases
        2) cause itching and scratching
    c) name common medications to destroy lice
        1) kwell shampoo or lotion
        2) A-200 "Pyrinate" liquid
        3) Xylol 15-20% in petrolatum or Aquaphor
        4) Topocide
    d) discuss treatment
        1) choose any of the above medications
        2) follow directions
        3) bathe and shampoo often
        4) comb hair with fine tooth comb
    e) hang clothes and bedding outdoors for 24 to 48 hours
    f) wear different clothes each day for a while
    g) scrub toilet seats
    h) scrub other washable articles
    i) use medicated shampoo and soap

XIII. Common Inspect Pests

1. Name common insect pests.

    a) fleas
    b) ticks
    c) bedbugs
    d) mites
    e) cockroaches
    f) chiggers
    g) flies
    h) spiders

2. Discuss problems and control associated with these insects.

    a) fleas infect furniture and bedding; are usually found on dogs and cats
    b) ticks transmit disease; frequently inspect dogs and cats because ticks infect animals
    c) bedbugs do not carry disease; leave characteristic row of bites--three to six red bumps an inch or two apart. Bedbugs are troublesome to get rid of as they rest in bedding; bedding may have to be burned
    d) mites cause severe itching
    e) chiggers burrow in skin, cause bumps, cause little disease but bites can result in secondary infection from scratching
    f) cockroaches carry diseases; must be gotten rid of usually by spraying

g) flies carry bacteria and viruses; control by getting rid of natural breeding places; keep all food covered or refrigerated; keep all dishes clean; dispose of garbage and waste properly
h) spiders bite humans; some are dangerous (such as Black Widow), others are relatively harmless

XIV. Home Safety

1. State verbally the most common causes of falls and how to eliminate such hazards.

    a) floors--apply wax in thin coats; let dry thoroughly; rub to hard finish; wipe up liquid, food and other spills
    b) stairways--use guard rails; keep stairs uncluttered; light well; place gates at top and bottom of stairway if young children are in the home
    c) ladders--firmly place legs, check stability
    d) bath tubs--have a strong grasp rail put in; use bath mats
    e) footwear--do not wear badly worn shoes and slippers; get non-slip soles; tie shoelaces
    f) porches--keep will lighted; free from obstruction; keep boards even
    g) walks--keep free of ice and obstruction; keep well-lighted
    h) small rugs--tack down rugs
    i) electric cords--never trail them across room
    j) climbing--do not trust chair or box--get a stepladder or stool which is in good repair
    k) yard--inspect regularly for dangerous plants; keep yard free of glass, nails, and jagged objects; prevent children from playing near an operating power machine

2. Name and identify two groups of poisons.

    a) primary--dangerous in small quantities, known and identified as such (weed killers, many prescription drugs)
    b) potential--dangerous in larger quantities, unknown and not usually thought of as poisons (aspirins, and other patent drugs, household cleaners, common plants, lead-base paint)

3. Explain ways to eliminate the hazards of primary (known) poisons.

    a) keep medicine under lock and key--away from food; out of reach of children (never call medicine "candy")

b) give medicine only to person for whom prescribed and in specified dosage
c) keep medicine in original containers--pour leftovers down the drain--wash container--throw it away--do not use it again
d) make bottles foolproof--mark with red warning. Tape jar or bottle closed
e) take or give medicines with care. Don't take in dark. Read and re-read label
f) read label on insecticides and weed killers. Use only as directed. Keep locked on high shelf.

4. State ways to eliminate the hazards of potential poisons.

a) read fine print on labels of cleaners. Learn how and when to use, how to dilute
b) store cleaners and polishes out of sight and out of reach of children. Do not store near food.
c) avoid using a product containing lead, such as paint
d) take only the prescribed dosage of aspirin or other non-prescription drugs
e) insure that workshop or painting area is properly ventilated; keep properly lighted

5. Explain the danger of fume poisoning and how to eliminate the hazards (carbon monoxide; grills).

a) fumes are odorless, tasteless, colorless
b) open garage doors before starting car; keep window open slightly
c) watch out in closed garage and in closed car
d) at a drive-in or on long trips, always leave car window partially open
e) never use charcoal indoors--even in a fireplace

6. State first aid procedures for poisoning (See First Aid Unit)

7. State the most common causes of burns and how to eliminate such hazards.

a) matches--never strike match with cover up; make sure they are out before thrown into wastebasket
b) stoves and fireplaces--always turn stoves off when not in use; keep flammables away from stoves; always use fireplace screens. If gas oven, light pilot carefully. Inspect furnaces, chimneys and flues regularly
c) make a practice of never smoking in bed
d) keep lighted candles away from curtains and other flammable material

- e) keep all matches out of reach of children; empty ash trays
- f) cover unused electric outlets to protect young children
- g) check baseboard plugs often for overloading
- h) know how to turn off gas supply in an emergency
- i) keep all exits clear
- j) keep all flammable materials away from areas where gas appliances are located
- k) keep children away from barbecue grill
- l) keep paint rags in covered metal containers or hung in the open air
- m) check furnace and water heater pilots frequently
- n) replace blown fuses with proper fuses rather than pennies or other substitutes
- o) appliances--keep hot appliances out of reach of children and out of everyone's usual movement pattern
- p) pot handles--always keep turned inward toward back of stove
- q) hot liquids--use pot holders; don't grab just a dish towel
- r) walk slowly and carefully when carrying hot liquids

8. State the most common causes of accidental cuts and how to avoid such hazards.

   - a) knives--make knives inaccessible to children
   - b) keep razor blades out of sight and reach of children
   - c) wrap blades before disposing of them
   - d) teach children to stay away from all power equipment
   - e) keep scissors in safe place

9. State the most common causes of electric shock in the home and how to eliminate such hazards.

   - a) never use cord with frayed or torn insulation
   - b) unused outlets should be capped with plug
   - c) know how to shut off source of electrical supply in an emergency
   - d) make sure all power machines are properly grounded and lighted
   - e) avoid using any electric appliances near the sink or tub or other places where water accumulates
   - f) appliances--keep out of bathroom. Never touch a light or appliance while in contact with water

10. List the most common causes of suffocation in the home and ways to eliminate such hazards.

    - a) plastic bags--keep them out of reach of children

b) watch children carefully when playing with ropes
c) abandoned refrigerators and airtight chests

11. State rules concerning safe use of firearms.

   a) store guns and ammunition in separate cabinets
   b) store in locked cabinet
   c) treat every gun as if it were loaded
   d) have war surplus or antique firearms checked by gunsmith

12. List and discuss the various causes of fire.

   a) faulty electrical connections
   b) poor storage of flammable materials
   c) faulty heating systems
   d) cigarettes
   e) kitchen range fires
   f) children playing with matches

13. List steps in getting out of a house in case of fire.

   a) check door for warmth. If no warmth go out.
   b) if door is warm, check window for safe escape
   c) if no window is available, proceed to door with cloth over mouth and nose. Open door carefully and go through smoke, keeping as close to floor as possible. Proceed to nearest exit
   d) do not return to building

14. Plan escape routes from every room in house using a map of one's home.

15. List items to include on an emergency phone list.

   a) doctor
   b) ambulance
   c) hospital
   d) state police
   e) neighbor
   f) fire department
   g) rescue squad
   h) poison control

16. Define terms dealing with safety that are found on products, face plates, and signs in the home.

   a) danger
   b) emergency
   c) high voltage
   d) do not remove back
   e) poison
   f) flammable
   g) use externally
   h) keep out
   i) use with adequate ventilation
   j) may be harmful or fatal if swallowed
   k) do not store near heat
   l) combustible

- m) directions
- n) hot
- o) cold
- p) caution
- q) electric

XV. Health Resources

1. State how one obtains medical assistance in emergencies.
    - a) hospital emergency service
    - b) local doctor
    - c) ask telephone operator to dial for assistance
2. Demonstrate how to make an appointment for a "check up" or for general medical assistance.
    - a) call doctor's office for appointment
    - b) call medical and health care information center
3. Describe the function of a state, county, or municipal medical and health care information center.
    - a) statewide information center
    - b) any health problem may be referred
    - c) referrals to other agencies are made
    - d) 24 hour service
    - e) a physician is always there to give free medical advice
    - f) they follow-up on every call to be sure the situation has been handled
    - g) their number is _______________ (insert local number)
4. Describe what free services are available from a state, county or municipal Department of Health.
    - a) child health services
        - 1) free clinics
        - 2) well-child clinics
        - 3) immunization clinics
        - r) mental retardation program
    - b) public health nurse program
    - c) home health services
    - d) nutrition service
    - e) chronic disease screening clinics
        - 1) diabetes
        - 2) glaucome
        - 3) heart and cancer control

BODY CARE

In the competitive job market as well as in day to day life, people are judged by their appearance. Therefore, it is essential to teach the skills which students need in order to maintain a clean and well groomed appearance. In addition, an effort should be made to help students understand the physical and mental health benefits of good grooming. Although body care has typically been a female-oriented unit, an effort should be made to make the unit of interest to male students.

Motivational Activities

1. Field trip to a beauty salon.
2. "Before" and "After" grooming program photos.
3. Beauty Day: practice hairstyles, make-up, manicuring, fitness exercises.
4. Making natural makeups from common household ingredients.
5. Assemble and try out various brands of grooming products.
6. Classroom visits by:
    1. Dental Hygienist
    2. Local hairdresser
    3. Others
7. Physical exercises that enhance health and figure.
8. Try on various wigs and note their effect on one's appearance.

GROOMING

BOOKS

Heilman J. (Ed.). Kenneth's complete book on hair. Garden City, New York: Doubleday & Co., Inc.

Ray, B. Teen profile. 3839 White Plains Road, Bronx, New York 10476: Milady Publishing Corporation.

TEXTS/WORKBOOKS

Breed, A. E. Good grooming for teenagers. 426 South Sixth Street, Minneapolis, Minnesota 55415: Burgess Publishing Company.

PAMPHLETS

Source: Dairy Council, 725 Grand Avenue, Dayton, Ohio 45406.

Guide to good eating.

Source: Scott Paper Company, Dayton, Ohio 19113.

Off to a beautiful start.

Source: Health Education Service, John Hancock Mutual Life Insurance Company, Boston, Mass.

What to eat and why.

Source: International Cellucotton Products, Educational Department, 919 N. Michigan Avenue, Chicago, Illinois.

Eyes that see and ears that hear.

Source: Revlon Inc., 767 Fifth Avenue, New York, New York 10002.

Guide to nail care.
Hair coloring and hair care.
The romance of fragrance.

Source: Winthrop Laboratories, Division of Sterling Drug Company, 90 Park Avenue, New York, New York 10016.

More than skin deep.

Source: The Proctor and Gamble Company, P.O. Box 499, Cincinnati, Ohio 45214.

Through the looking glass.

Source: Consumer Label Department, International Ladies Garment Workers' Union, 275 7th Avenue, New York, New York 10001.

How to be well dressed.

Source: Armour-Dial, Inc., 221 North LaSalle Street, Chicago, Illinois 60601.

Good looks here and now.

Source: American Medical Association, Department of Health Education, 535 North Dearborn Street, Chicago, Illinois 60610.

As others see us.
Time out for good grooming.

FILMSTRIPS/CASSETTES

Source: Interpretive Education, Division of Illinois Envelope Company, 400 Bryant Street, Kalamazoo, Michigan 49001.

Female Self-Care Series

Hair care.
Make up.
Better dress.
Nail care.
Your teeth.

Male Self-Care Series

You.
Care of the skin.
Care of the teeth.
Nail care.
Care of the hair.

FILMS

Source: Coinselth Division, Shuton Incorporated, 697 Route 46, Clifton, New Jersey 07015.

Let's face it beautifully.

Source: Modern Talking Pictures Inc., 3 East 54th Street, New York, New York.

Make good grooming a habit.

Source: Armour-Dial Inc., Dial Research Laboratories, 221 North LaSalle Street, Chicago, Illinois 60601.

Good looks here and now.

Source: International Film Bureau, Inc., 332 South Michigan Avenue, Chicago, Illinois 60604.

A beautiful day to be beautiful.

KITS

Source: Gillium Book Company, Home Economics Supplies, Box 4505, Kansas City, Mo. 64124.

Personal appearance and charm. (MBK 10 $18.00)

Source: Proctor and Gamble Teaching Aids, P.O. Box 599, Cincinnati, Ohio 45214.

Personal grooming.

Source: Avon, 605 Third Avenue, New York, New York 10016.

Good grooming program kits.

Source: Bonnie Bell Good Looks Books, P.O. Box 6177, Cleveland, Ohio 44010.

Wellspring Kit.

Source: Public Relations Department, Carnation Company, 5045 Wiltshire Boulevard, Los Angeles, California 90036.

Beauty and fashion project.

OTHER

Source: Edmark Associates, 13249 Northup Way, Bellevue, Washington 98005.

Project MORE. Daily living skills programs. Hair Rolling.

BODY CARE

Terminal Performance Objective

Following the completion of prescribed learning activities, the student will be able to describe and demonstrate practices and procedures for grooming. Practices and procedures should be approved by competent individuals from the body care professions.

I. Skin Care

1. State three practices that contribute to the maintenance of healthy skin.

   a) balanced diet
   b) exercise and out-of-doors activity
   c) cleaning with appropriate soaps
   d) general state of health
   e) moderate or no use of make-up
   f) proper use of commercial skin products

2. State three skin types.

   a) oily
   b) dry
   c) normal
   d) combination

3. Identify one's own skin type.

4. Identify and use essential materials for skin care.

   a) soap
   b) water (sink, bath, tub, shower)
   c) towel, wash cloth
   d) deodorant, powder

5. Correctly adjust water force and temperature.

6. Wash face and hands with adequate soapy lather.

7. Rinse with both warm water and cool water.

8. Describe three common skin disorders.

9. Discuss and demonstrate how to prevent acne, pimples, and black heads.

10. Discuss wise and unwise usage of skin care products.
    - a) many skin care products are unnecessary
    - b) certain skin care products cause burns, rashes, and allergic reactions
    - c) many skin care products do not perform as advertised
    - d) most cosmetic clubs or package plans are of little or no value
11. Explain how to decide when and if a skin product is necessary and helpful.
12. Describe how to bathe properly in a bathtub or shower.
13. Explain the necessity of using an underarm deodorant.
14. State the differences between deodorants and anti-perspirants.
15. Identify and state the advantages and disadvantages of three major forms of packaging deodorants and anti-perspirants.
    - a) cream
    - b) roll-on
    - c) spray
16. Select and apply deodorant product to underarms.
17. Explain why clean undergarments and clothes should be worn after bathing or showering.
18. Hang washcloth and towel to dry.
19. Explain what causes washcloths and towels to acquire an offensive odor.

II. Foot Care

1. List proper care and appearance of hose and socks.
    - a) washed daily
    - b) without runs, or holes
    - c) colors that do not bleed
2. Explain proper selection, care, and appearance of shoes.
    - a) clean
    - b) polished
    - c) well-fitted
    - d) practical
    - e) safe

3. Clean and polish shoes.

    a) assemble equipment
        1) shoes (on feet)
        2) 1 brush
        3) 2 cloths
        4) shoe polish
        5) damp sponge
    b) wipe shoes with damp sponge to remove dirt. Allow time to dry
    c) rub small cloth in the paste, polish in a circular motion
    d) rub cloth with polish over each shoe
    e) allow time for shoe to dry
    f) brush each shoe
    g) buff over each part of a shoe until there is no evidence of the polish

4. Explain proper treatment of blisters, corns, and callouses.

    a) blisters--cover with band-aid (do not break blister)
    b) corns--see doctor, or if minor instance, use corn removing preparation
    c) callouses--soak and use pumice stone

5. Explain proper care of toenails.

    a) clean
    b) cut regularly (straight across)

6. Demonstrate proper footcare.

III. Mouth Care

1. State reasons for proper dental care.

    a) health (loss of teeth, pain)
    b) unsightly appearance
    c) bad breath
    d) unclear speech

2. Name major dental problems.

    a) tooth decay
    b) abscesses
    c) impacted teeth
    d) gum disease

3. List the proper items for cleaning teeth.

    a) toothbrush (with flat brushing surface, soft bristles)

    b) toothpaste (or a mixture of table salt and baking soda)
    c) dnetal floss
    d) water

4. Demonstrate correct technique of cleaning teeth.

    a) many ways--one up and down or back and forth strokes
    b) dental floss (pull in one direction only)
    c) use mouthwash is desired

5. Explain the need for regular dental examinations.

    a) see a dentist at least twice a year
    b) dentist can stop problems before they become complicated and costly
    c) the dentist reviews your dental record, examines your teeth, X-rays, and cleans teeth

6. Explain how well-balanced diet plays a part in dental health.

    a) a well-balanced diet helps build and maintain strong, healthy teeth
    b) an excessive use of sweet and sticky food can cause decay (eat applies instead)

7. List the rules of good dnetal health.

    a) eat proper foots (vegetables and fruits)
    b) keep teeth clean daily
    c) see dentist at least twice a year

IV. Hair Care

1. Explain factors contributing to clean and healthy hair.

    a) daily brushing and combing
    b) twice weekly shampooing
    c) clean brushes and combs--don't share them
    d) good health in general

2. Identify different hair textures (coarse, thin, smooth).

3. Identify different hair types (dry, oily, normal).

4. Determine hair style best suited to hair type and face shape.

5. Have hair trimmed for desired style.
    - a) choose someone to trim hair
    - b) set time to have hair trimmed
    - c) go to have hair trimmed at set time
    - d) explain (or show picture) of desired cut.
6. Prepare hair for shampooing.
    - a) massage scalp properly with hands
    - b) brush hair from nape of neck forward
    - c) brush hair from forehead back
7. Shampoo hair.
    - a) choose shampoo appropriate to hair type
    - b) choose rinse appropriate to hair type
    - c) wet hair thoroughly
    - d) apply small amount of shampoo
    - e) massage shampoo into scalp, hair, and hairline gently with fingertips
8. Set hair.
    - a) determine roller size for desired hair style
    - b) distinguish between pins and clips
    - c) apply small amount of setting lotion; comb through hair
    - d) section off hair for desired set
    - e) tuck ends of hair around roller
    - f) rolling:
        - 1) crown--hold strand of hair up and away from scalp
        - 2) sides and back--pull strand straight out
        - 3) forehead--pull strand straight forward
9. Dry hair.
    - a) identify dryer--plug into outlet
    - b) select proper drying temperature
    - c) place head under dryer
    - d) dry hair
    - e) check for complete dryness by unwinding one roller and feeling the hair strand with fingers
    - f) continue drying until hair is completely dry

10. Comb out hair.
    - a) remove rollers and pins gently
    - b) let curls set 2-3 minutes before brushing
    - c) lean over and brush toward floor
    - d) stand up and brush into desired style
    - e) touch up certain areas with comb if needed
    - f) spray lightly with hair spray, avoiding contact with eyes

11. Discuss and recognize alternative methods of styling hair.

12. Clean-up.
    - a) replace shampoo, rinse, rollers, clips, pins, hair spray and setting lotion to proper storage place
    - b) clean up sink area
    - c) put towel in appropriate place for laundry
    - d) put brush and comb in appropriate place for cleaning

13. Clean brush and comb.
    - a) assemble brush and comb and detergent
    - b) comb hair out of brush before soaking
    - c) place brush and comb in basin
    - d) place one teaspoon of detergent and amonia in a basin
    - e) pour hot water over comb and brush
    - f) wash brush and comb
    - g) place on towel to dry--dry in sun if possible

V. Make-Up

1. Discuss reasons why people use make-up.

2. State general guidelines for using make-up.
    - a) list occasions and times of day when make-up is appropriate
    - b) apply make-up to clean skin
    - c) completely remove make-up and wash face before going to bed
    - d) apply make-up in good light
    - e) apply make-up sparingly
    - f) select make-up which is appropriate for complexion and coloring

3. Prepare for make-up.
    a) wash face properly
    b) identify cleansing lotion
    c) apply cleansing lotion with cotton balls
    d) identify moisturizer
    e) apply moisturizer

4. Apply foundation.
    a) identify skin color
    b) identify foundation
    c) select foundation--wrist test
    d) apply foundation--dot method
    e) blend in foundation, cover face, chin, neck

5. Apply blusher.
    a) identify types of blushers
    b) apply blusher over cheek area with finger or brush

6. Apply lipstick or lip gloss.
    a) identify lipstick or gloss
    b) choose appropriate shade for skin color and hair
    c) apply lipstick evenly with tube, finger or brush
    d) blot lipstick

7. Apply eye make-up.
    a) identify eye shadow
    b) choose eye shadow to compliment dress or eye color
    c) apply eye shadow with fingers or brush
    d) blend in shadow
    e) identify eye liner
    f) choose eye liner according to color of hair
    g) apply eyeliner with brush in thin line
    h) identify mascara
    i) select correct color mascara--a shade darker than eye lashes
    j) apply mascara to eye lashes with upward strokes

8. Apply finisher.
    a) identify translucent powder
    b) with cotton ball, pat over face lightly

9. Remove make-up.
    - a) identify eye make-up remover
    - b) remove eye make-up
    - c) wash face
    - d) identify astringent
    - e) apply astringent
    - f) apply moisturizer if desired

VI. The Manicure

1. Describe how disease and germs are spread by unclean finger nails and toe nails.

2. Demonstrate correct method for cutting finger nails and toe nails.

3. Describe how to prevent "hang nails"

4. Describe hazards of long finger nails.

5. Clean nails with file.

VII. Physical Fitness

1. Explain the importance of exercise:
    - a) stimulates circulation
    - b) strengthens muscles
    - c) improves posture
    - d) reduces tension (hence is an antidote for emotional stress)
    - e) controls weight
    - f) helps to maintain a healthy heart (improves cardiovascular efficiency)
    - g) prevents joint stiffness

2. Name three activities which contribute to physical fitness.
    - a) active games and sports
    - b) walking
    - c) rhythmic activities
    - d) vigorous hobbies
    - e) prescribed exercises
    - f) manual labor

3. Demonstrate three exercises which contribute to physical fitness.
    - a) situps
    - b) running in place
    - c) toe touches
    - d) body twists

4. Select and demonstrate three new exercises from a good exercise manual.

    a) 5 BX Royal Canadian Air Force

5. Explain the difference between physical fitness and physical strength.

    a) overall endurance
    b) strength of specific muscles

VIII. Posture

1. List the importance of good posture.

    a) appearance (attitude, impressions made)
    b) physical health (breathing, back problems)

2. Discuss causes of poor posture.

    a) lack of muscles control
    b) poor nutrition
    c) lack of rest
    d) bad habits of sitting or standing
    e) improper shoe fit

3. Demonstrate correct standing posture.

    a) feet parallel, weight on both feet
    b) back straight
    c) shoulders relaxed and straight
    d) head up, chin parallel to ground

4. Demonstrate correct sitting posture.

    a) back straight
    b) relaxed
    c) head up

5. Discuss characteristics of "bad" posture.

    a) slouching
    b) stooping
    c) muscles rigid

FIRST AID AND EMERGENCY PREPAREDNESS

Like everyone else, educationally disadvantaged and handicapped adolescents are faced with emergency situations. Knowing what to do, or what not to do, in such situations can be critical--even a matter of life and death! A knowledge of first aid which is regularly reviewed and applied during simulated emergencies could result in the ability of the student to save his life or that of another. Failure by teachers to impart such basic survival skills and knowledge could result in needless tradgedies.

Motivational Activities

1. Role playing - simulated emergency situations.
2. Demonstrations - bandaging, splinting, etc.
3. First Aid Movies. See resource list.
4. Resusci-Annie. A doll available for artificial respiration. Contact the Red Cross.
5. Practice making phone calls in simulated emergency situations.
6. Students can make first aid kits for home use.
7. Contact Civil Defense, Red Cross, or federal disaster agencies for additional ideas from resource persons.

FIRST AID

TEXT/WORKBOOKS

Bontranger, Frances M., Can you give first aid? Box 131, Syracuse, New York 13210: New Readers Press, 1969.

Breed, Allen E., Safety, indoors and out. 426 South Sixth Street, Minneapolis, Minnesota 55415: Burgess Publishing Company, 1970.

First aid manual. 535 North Dearborn Street, Chicago, Illinois 60610: American Medical Association, Department of Health Education.

Instructions on safety. Box 131, Syracuse, New York 13210: New Readers Press, 1970.

Udavari, S., & Laible, J. Health, safety and sanitation. Post Office Box 202, Austin, Texas 78767: Steck-Vaughn Company, 1973.

PAMPHLETS

Source: Metropolitan Life, Health & Welfare Division, 1 Madison Avenue, New York, New York 10010.

Publications list for first aid and emergency medical care.

Source: Readers Digest, Pleasantville, New York 10570.

Guide to first aid.

Source: Manager of Education, Manufacturing Chemists Association, Inc., 1825 Connecticut Avenue, N.W., Washington, D.C. 20009.

Everyday facts about poison prevention.

Source: Information Office, National Institute of Allergy & Infectious Diseases, National Institute of Health, Building 31, Room 7A 32, Bethesda, Maryland 20014.

Poison ivy, oak and sumac.

Source: Consumer Services, Johnson & Johnson, 501 George Street, New Brunswick, New Jersey 08903.

First aid wall chart.

FILMSTRIPS

Source: Series A-1400-G, Harvest Laboratories, Box 4309, East Providence, Rhode Island 02914.

Safety/health/citizenship.

FILMS

Source: Contact local Red Cross for first aid instructional films and aids.

FIRST AID

Terminal Performance Objective

Upon completion of this unit, the student will be able to follow the basic rules of first aid in administering help under simulated emergency situations, using procedures taught by the American Red Cross or the Civil Defense Office.

I. Basic Rules

1. State basic rules of first aid:
    - a) do only what is necessary
    - b) seek medical assistance
    - c) keep calm
    - d) keep victim lying down until the nature of the injury is known
    - e) explain why it is necessary to refrain from moving the victim
    - f) when multiple injuries are involved, immediately:
        - 1) clean air passage
        - 2) stop bleeding
        - 3) treat for shock

II. Bleeding

1. Identify the correct first aid procedures for treating minor cuts, scratches, and abrasions.
    - a) clean injury thoroughly with appropriate antiseptic
    - b) apply a sterile dressing if necessary
2. State the correct first aid procedures for treating wounds resulting in severe bleeding.
    - a) ask someone to call doctor immediately
    - b) apply pressure (when possible) directly over wound using a clean cloth. When bleeding stops, bandage firmly
    - c) elevate wound when on an extremity
    - d) use digital pressure on pressure points (if bleeding cannot be stopped with direct pressure)

3. Discuss ways of preventing infection.
    - a) keep sterilized bandages readily available
    - b) when commercial bandages are not readily available, sterilize fabrics and keep them on hand, when time permits
        - 1) wash fabric with soap and water and thoroughly dry it
        - 2) boil fabric and thoroughly dry it
        - 3) expose fabrics to the sun for at least ten minutes

III. Breathing

1. Perform the necessary steps for administering artificial respiration.
    - a) tilt head back so that chin points straight up and skin on neck is taut
    - b) check mouth for foreign matter and clear any foreign debris away with fingers
    - c) while propping chin up with one hand, and closing nose with another
    - d) take a deep breath and blow air into victim's lungs until chest rises (not the stomach)
    - e) remove mouth, take another breath and repeat
    - f) do this twelve times a minute for an adult (twenty times a minute for a child)

2. State general first aid procedures for poisons.
    - a) call a doctor for advice
    - b) quickly administer fluids (water or milk in large amounts)
    - c) to induce vomiting add several tablespoons of baking soda to each glass of water
    - d) if fluids can't be administered, cause victim to gag with your finger
    - e) if antidote is on label, administer as directed
    - f) if no antidote is known, administer universal antidote: two parts crumbled burnt toast, one part strong tea, and one part milk of magnesia

3. Name four types of poisoning which require special treatment.
    - a) strong acids (give water, then olive oil). Do induce vomiting
    - b) strychnine (get help--QUICKLY)
    - c) kerosene (do not induce vomiting)
    - d) cases where victim is already in a coma (get help)

IV. Shock

1. Explain the causes of shock.

    a) severe injury to body from burns, wounds, or fractures (loss of blood)

2. Identify symptoms of shock.

    a) victims eyes are vacant
    b) his pupils are dilated
    c) his breathing is shallow and irregular
    d) his pulse is weak or absent
    e) his skin is pale, cool, and moist
    f) victim sometimes feels nauseated

3. Demonstrate the treatment for shock.

    a) keep victim lying down
    b) prevent loss of body heat by placing blanket under body
    c) place blanket over victim if it is cool
    d) raise victim's legs 8" to 12" unless there are signs of: head injury, breathing difficulty, or pain from fracture
    e) give water in sips if victim is thirsty

V. Fractures

1. Identify the signs of a broken bone.

    a) tenderness over injury with pain on movement
    b) inability to move injured part
    c) unnatural shape
    d) swelling and discoloration
    e) bone torn through skin

VI. Burns

1. State symptoms of a first degree burn.

    a) painful, reddened skin

2. Demonstrate proper first aid treatment for first degree burns.

    a) use cold water and ice cubes (keep burn under water until there is little or no pain)

  - b) if no water is available, apply sterile dressing
  - c) for sunburn, apply first aid ointment or pain reliever

3. State symptoms of a second degree burn.

  - a) skin red and blistered

4. Demonstrate proper first aid treatment for second degree burns:

  - a) do not break blister
  - b) cover burn with dry sterile gauze (cover gauze with bandage to keep it in place)
  - c) if burn is widespread, get medical help (treat for shock)

5. Describe symptoms of a third degree burn.

  - a) skin burned away
  - b) flesh charred

6. State first aid procedure for treating a third degree burn.

  - a) get medical help immediately
  - b) treat for shock
  - c) cut loose clothing around burn (make sure hands are clean)
  - d) apply sterile dressing to burn
  - e) if burn is extensive, wrap additional clean sheet around victim
  - f) if cold, cover victim with blankets

VII. Bites

1. State the necessary first aid treatment for a dog bite.

2. Explain first aid procedure for snake bites.

  - a) have victim lie down
  - b) see that affected part is lower than rest of body
  - c) give first aid for shock (if bite is in leg do not raise feet)
  - d) apply constriction band 2" to 4" above wound (if on limb). Loosen for a minute every five minutes. Apply cold packs to wound

e) apply cold packs to wound
f) take victim in lying position to doctor. (Telephone ahead if possible)

3. State first aid procedure for insect bites.

    a) for bee stings--apply baking soda, ice packs, call doctor if swelling is severe. (Treat for shock if multiple bites)
    b) for ticks--burn imbedded tick with match (make sure head is not embedded after tick is removed)
    c) for chigger bites--apply clear fingernail polish to suffocate it

4. Identify the correct procedure for washing foreign materials from eye.

    a) tilt head toward injured side
    b) pour water slowly so it rolls over eye surface (hold lid up)
    c) use at least a quart of water

5. State the procedure for removing object from beneath upper eyelid.

    a) have victim look down
    b) grasp edge of upper lid firmly
    c) apply slight pressure to upper lid with side of blunt pencil
    d) turn inner surface of lid outward
    e) if you can see object on inner surface of lid, remove it by touching it with corner of a clean handkerchief (never touch the eye itself)

6. State the procedure for removing object from lower lid.

    a) place thumb just below lower lid
    b) move it down gently
    c) if obstruction is visible, remove it with a clean moist handkerchief

7. Explain the procedure for removing an object from the cornea.

    a) have victim wink several times (to stimulate tear formation)
    b) if object does not dislodge, have victim close eye
    c) put bandage over eye, and get victim immediately to a doctor
    d) never touch cornea with instrument of any kind

8. Discuss treatment for a "black eye."

   a) use cold applications immediately
   b) later apply warm wet towels to help hasten absorption of discoloring chemicals.

VIII. Heat Stroke and Heat Exhaustion

1. Recall symptoms of heat stroke.

   a) headache
   b) dry skin
   c) rapid pulse
   d) dizziness and nausea
   e) unconsciousness in severe cases
   f) very high temperature (106-109°)

2. State first aid procedures for heat stroke.

   a) bring victim indoors
   b) disrobe victim and give bed rest
   c) if conscious administer salt solution (1/2 teaspoon per half glass water, every fifteen minutes for three or four doses)
   d) sponge body with alcohol or lukewarm water
   e) check temperature (under 103° safer)
   f) check pulse rate (110 beats per minute associated with tolerable temperature) if thermometer not available
   g) get medical help immediately

3. State symptoms of heat exhaustion (less severe than heat stroke).

   a) fatigue
   b) headache
   c) nausea
   d) weakness
   e) skin pale
   f) normal temperature

4. Describe treatment for heat exhaustion.

   a) provide bed rest
   b) administer salt solution
   c) obtain medical care for severe illness

IX. Frostbite

1. Name symptoms of frostbite.

   a) skin flushed (before frostbite sets in)

  - b) white or greyish-yellow skin color
  - c) blisters may appear
  - d) pain felt in early stages, but later subsides
  - e) frostbitten part feels cold and numb

2. State treatment for frostbite.

  - a) firm pressure with hand against frostbitten extremity (do not rub with hand or snow)
  - b) cover frozen part with wool material
  - c) provide victim with extra clothing or blankets
  - d) get victim indoors as soon as possible
  - e) give victim warm drink
  - f) immerse frostbitten extremity in water at body temperature (90-100°). Never in hot water.
  - g) encourage victim to exercise frostbitten extremities after they have warmed
  - h) do not disturb blisters
  - i) obtain medical assistance immediately

X. Sprains

1. State symptoms of sprains (injuries around joints).

  - a) swelling
  - b) tenderness
  - c) pain on motion

2. State first aid procedures for sprains.

  - a) elevate on pillows
  - b) put ice bag on injury for one-half hour
  - c) have sprain X-rayed

XI. Foreign Objects in Throat or Air Passage

1. Discuss correct procedure for removing a foreign object lodged in the throat or air passage.

  - a) allow patient to attempt to cough up (don't probe with fingers lest object is pushed further into air passage
  - b) when victim is a child, turn him upside down and slap vigorously between shoulder blades
  - c) always take victim to doctor unless object is expelled. (Give victim nothing to eat or drink)
  - d) if breathing stops, give artificial respiration and try to clear air passage with fingers

MARRAIGE AND FAMILY ADJUSTMENT

Disadvantaged and handicapped individuals tend to lead normal life patterns. For this reason, it is extremely important that they understand the responsibilities and adjustments that one must make to achieve a well-adjusted family life. The student should be helped to realize the spectrum of choices open to him or her in terms of sexual behavior and to recognize the possible consequences of each choice. Therefore, a primary purpose of this unit is to help the students gain the information essential in making choices and becoming responsible and self-reliant individuals.

Within this manual, there is a unit on contraception. Before teaching any of these concepts, discuss the ramifications of presenting such information with your program supervisor. Failure to do so can result in embarrassing confrontations between the teacher and the supervisor as well as with irrate parents. Together you may elect not to teach any items in this unit or you may wish to invite a doctor or Planned Parenthood, Inc. counselor to the class to make such a presentation. Rest assured, however, that students within your class will be seeking this kind of information now or later, if they are not already well-informed. As a minimum, inform the students where they can obtain competent counseling in this delicate matter.

MARRIAGE AND FAMILY

BOOKS

Duvall, E. M. *Family development*. Philadelphia and New York: J. B. Lippin Cott Co., Inc., 1962.

Flanagan, G. L. *The first nine months of life*. New York: Simon & Schuster, 1962.

Goodrich, F. W., Jr. *Preparing for childbirth*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966.

Maternity Center Association. *A baby is born*. New York: Grossett & Dunlop, 1964.

Pryor, K. *Nursing your baby*. New York: Harper & Row, 1963.

Read, G. *Childbirth without fear: The principles & practice of natural childbirth*. New York: Harper & Row, 1959.

Ribble, M. A. *The rights of infants*. New York: Columbia University Press, 1965.

TEXTS/WORKBOOKS

Baer, K. Having a baby series. *Giving Birth*. Box 131, Syracuse, New York 13210: New Readers Press, 1973.

Baer K. Having a baby series. *Prenatal Care*. Box 131, Syracuse, New York 13210: New Readers Press, 1973.

Be informed series. *Be Informed on Marriage* (Unit 12). Box 131, Syracuse, New York 13210: New Readers Press.

Fane, A., & Fane X. Behind every face series. *A Challenge of Success*. Xerox Distribution Center, 555 Gotham Parkway, Carlstadt, New Jersey 07072: Ginn & Company, 1970.

Fane, A., & Fane X. Behind every face series. *A Changing Person*. Xerox Distribution Center, 555 Gotham Parkway, Carlstadt, New Jersey 07072: Ginn & Company, 1970.

Fane, A., & Fane X. Behind every face series. *A Family*. Xerox Distribution Center, 555 Gotham Parkway, Carlstadt, New Jersey 07072: Ginn & Company, 1970.

Hyde, J., Smith, R., & Travis, J. *Making it on your own*. 111 Barron Avenue, Johnstown, Pennsylvania 15906: Mafex Associates, Inc., 1971.

Koschnick, K. Having a baby series. *Conception and Pregnancy*. Box 131, Syracuse, New York 13210: New Readers Press, 1973.

Phillips, M. Having a baby series. *The Baby and the Family*. Box 131, Syracuse, New York 13210: New Readers Press, 1973.

Phillips, M. *Planning your family*. Box 131, Syracuse, New York 13210: New Readers Press, 1973.

Prevo, H. Family life books. *Family Life* (Book I). 324 First Street, Liverpool, New York 13088: Frank E. Richards Publishing Co., Inc.

Prevo, H. Family life books. *Family Life* (Book II). 324 First Street, Liverpool, New York 13088: Frank E. Richards Publishing Co., Inc.

Prevo, H. Family life books. *Practice Material for Family Life Book I*. 324 First Street, Liverpool, New York 13088: Frank E. Richards Publishing Co., Inc.

Prevo, H. Family life books. *Practice Material for Family Life Book II*. 324 First Street, Liverpool, New York 13088: Frank E. Richards Publishing Co., Inc.

Young American series. *In Your Family* (Book I). 6 Davis Drive, Belmont, California 94002: Fearon Publishers, Lear Siegler Inc., Education Division.

PAMPHLETS

Source: The National Foundation--March of Dimes, 800 Second Avenue, New York, New York 10017.

Be good to your baby before it's born.

Source: Carnation Company, Medical Department, 5045 Wiltshire Boulevard, Los Angeles, California 90036.

Pregnancy in anatomical illustrations.

Source: American Medical Association, 535N Dearborn Street, Chicago, Illinois 60610. (15¢ each).

What you should know about the pill.

Source: Children's Bureau Publications, U.S. Department of Health, Education and Welfare, Superintendent of Documents, U.S. Printing Office, Washington, D.C. 20402. (15¢ each)

391-1961 When your baby is on the way.

Source: The Life Cycle Center, Kimberly-Clark Corporation, Box 551-CK, Neenah, Wisconsin 54956.

Getting married.
Your first pregnancy.

Source: Channing L. Bete Co., Inc., 45 Federal Street, Greenfield, Mass. 01301.

Family Life Education Mini Units

4566-1622 What is a family?
4566-1128 Going to have a baby.

Source: Steck Vaughn Company, P.O. Box 2028, Austin, Texas 78767.

Family Development Series by Stephen S. Udavari.

3330-9 Your family.
0331-9 Communicating with others.

FILMS

Source: Text-Film Department of McGraw Hill Book Company.

Who's boss. (16 minutes)
Marriage today. (22 minutes)
This charming couple. (19 minutes)
Choosing for happiness. (14 minutes)
It takes all kinds. (20 minutes)
In time of trouble. (14 minutes)
Jealousy. (16 minutes)
Who's right? (18 minutes)
How much affection. (20 minutes)
Is this love? (14 minutes)
When should I marry? (19 minutes)

Source: International Film Bureau Inc., 332 South Michigan Avenue, Chicago, Illinois 60604

Together alone. (Preparation for Marriage)

OTHER

Source: Contact the local Planned Parenthood Association for films, speakers and visual aids.

MARRIAGE AND FAMILY ADJUSTMENT

Terminal Performance Objective

After completing prescribed instructional activities, the student will demonstrate an awareness of factors involved in preparing for marriage through role playing and appropriate classroom activities and discussions. Objectives will be evaluated by a qualified instructor, planned parenthood counselor, or other authority in family relations and sexual development.

I. Role of the Family

1. State reasons that people marry:
    - a) love
    - b) security--financial and emotional
    - c) child rearing
    - d) tradition
    - e) companionship
    - f) regarded as ideal situation for forming child's personality
2. Identify advantages of family membership.
    - a) love
    - b) social skills
    - c) development of values
    - d) emotional security
    - e) understanding
    - f) concern for and cooperation with others
3. Explain how specialized institutions help the family.
    - a) schools
    - b) churches, synagogue, or other religious entities
    - c) welfare services
    - d) economic and government institutions
4. Discuss the benefits from belonging to a nuclear family.
    - a) practical aid
    - b) feeling of identification
    - c) sentiment
    - d) informal social contacts

5. Discuss the role of each member of the immediate family.

woman	man
a) person	a) person
b) wife	b) husband
c) mother	c) father
d) homemaker	d) homemaker
e) provider (if applicable)	e) provider

children

- a) person
- b) sharing family responsibilities

II. Preparation for Marriage

1. Identify steps in building the relationship which leads to marriage.
    - a) dating
    - b) going steady
    - c) engagement

2. Explain the purposes of dating and courtship.
    - a) communication in preparation for marriage
    - b) establishing a more intimate knowledge of a person
    - c) discovering if persons are compatible
    - d) exploring values, ideas, and common interests

3. Discuss appropriate behavior during courtship.
    - a) behavior consistent with values of both individuals

4. Discuss factors to be considered before marriage.
    - a) maturity of persons involved
    - b) parental approval (in most instances)
    - c) amount of exposure to other partners
    - d) degree of mutual responsibility
    - e) degree of emotional involvement
    - f) ego involvement
    - g) degree of identification
    - h) importance of personality needs

5. Explain the reasons for the discussion of one's expectations of marriage prior to becoming engaged or married.
    - a) reach basic agreement on issues that would later disrupt unity and trust

- b) project economical and practical arrangements
- c) discuss children
- d) discuss religion--type of marriage--method of bringing up children
- e) what marriage means--restrictions, freedoms, advantages, disadvantages
- f) discuss birth control

6. Discuss the advantages of professional marriage counseling

    - a) provides objectivity
    - b) provides reliable guide
    - c) provides opportunity for answering questions and discussing their relationship with a reliable person

7. Explain legal requirements for marriage.

    - a) minimum age
    - b) prohibition of marriages between close relatives
    - c) first-cousin marriages prohibited in about two thirds of the states
    - d) physical tests--blood tests
    - e) variations can be expected from state to state

8. Describe the importance of a general physical examination.

9. Name the various components of a general check-up.

    - a) blood pressure
    - b) heart beat
    - c) eyes, ears, nose, throat
    - d) intestines
    - e) lungs
    - f) weight/height
    - g) reflexes and muscle tone
    - h) urinalysis
    - i) other aspects as needed

10. Describe the importance of having an annual check-up.

11. Explain the importance of the premaritial examination.

    - a) determine general state of health
    - b) point out any symptoms that might affect the couple's choice or conjugal relationship
    - c) discover any details that could affect couple's sexual adjustment
    - d) discover any anatomical characteristics that would make pregnancy inadvisable

- e) test for Rh factor
- f) discuss questions or problems with physician
- g) obtain advice on contraception
- h) explain why premarital blood tests are required in most states
- i) discuss what comprises a pelvic examination

III. Problems of Teenage Marriage

1. List and discuss problems and consequences of teenage marriages.

    - a) economic problems
    - b) attitudes of general public (disapproving)
    - c) unreadiness for personal adjustments involved
    - d) problems related to child raising
    - e) continued education
    - f) pregnancy before marriage
    - g) divorce rate

IV. Cousin Marriages

1. Discuss legality of cousin marriages.

    - a) some twenty nine states prohibit marriage between first cousins

2. Discuss the reasons that ancient cultures allowed cousin marriages.

    - a) strengthened kinship ties
    - b) kept related families together
    - c) prevented dispersion of family property

3. Discuss the adverse factors related to cousin marriages.

    - a) incest taboo
    - b) recessive genes
    - c) tend to produce children with physical abnormalities

V. Weddings

1. Discuss why people have wedding ceremonies.

    - a) publicity
    - b) status
    - c) doorway to new relationship
    - d) safeguards moral standards
    - e) protects property rights

f) ensures legitimacy of children
g) guarantees the legitimacy of the marriage contract
h) guards against marriages within prohibited relationships
i) churches consider marriage a sacrament

2. List and discuss factors involved in planning a wedding.

a) size
b) cost--who pays for what
c) date of wedding
d) setting
e) showers
f) newspaper write-up
g) invitations, announcements, thank-you notes
h) dress
i) flowers
j) wedding reception place
k) food and refreshment
l) license
m) examinations and blood tests
n) papers and documents that require name change

3. Discuss alternatives to church or home weddings

a) justice of the peace
b) elopement
c) nontraditional ceremonies

4. Discuss various wedding ceremonies:

a) poems or passages read aloud (from Bible, other books, or couple makes up readings or recitations)
b) taking of hands
c) vows--"I do" and "I will" (statement of commitment)
d) exchanging rings (signifies pledge and hope)
e) pronouncement of man and wife
f) kiss

VI. Adjustments

1. Define what is meant by adjustment.

a) process whereby people work out the satisfaction of their needs in all areas--physical psychological, social

2. List areas in which adjustments take place.
    - a) mutual compromises and tolerance of any differences in attitudes and habits
    - b) needs previously satisfied by others (siblings, for example) now to be satisfied by partners
    - c) exclusive nature of the marital relationship
    - d) working out financial responsibilities
    - e) problems concerning children
    - f) disagreements on how to spend leisure time
    - g) other personality clashes
        - 1) friends
        - 2) working wife
        - 3) in-laws
        - 4) religion
    - h) sexual adjustment
    - i) defining the role of husband and wife
    - j) coordinating roles of husband and wife
        - 1) decision making
        - 2) household tasks
        - 3) occupations
    - k) adjustment to growth or change in one's partners

3. Discuss the most common problems which are encountered in marriage:
    - a) struggle for equality and domination
    - b) financial problems
    - c) personal habits
    - d) cultural backgrounds

4. Discuss problems which must occasionally be resolved within marriage relationship.
    - a) health
    - b) relations with associates and friends (both past and present)
    - c) recreation
    - d) housekeeping
    - e) relations with relatives
    - f) parent/child clashes
    - g) financial crises
    - h) in-laws
    - i) sex
    - j) religion
    - k) employment
    - l) education

VII. Parenthood

1. Explain the importance of a conscious decision to have or not to have children.

2. Discuss the importance of advanced planning for a family's future needs.

    a) economic
    b) educational
    c) vocational

3. Discuss the proper age for parenthood.

    a) not too young or too old
    b) degree of psycho-social maturity

4. Discuss health of parents.

    a) physical
    b) mental

5. Discuss desirable attitudes of the husband and wife toward pregnancy.

6. Discuss the adjustments which couples must make once married.

    a) changing lifestyles
    b) added responsibilities
    c) social and environmental aspects that need to be considered
    d) home management
    e) financial commitment

VIII. Contraception

1. Explain the rhythm method of contraception.

    a) charting cycle for eight to twelve months to estimate fertile period, by subtracting eighteen days from shortest cycle and eleven days from longest cycle

2. State the advantages of the rhythm method.

    a) natural
    b) acceptable to Roman Catholic Church
    c) inexpensive
    d) no health side effects

3. State the disadvantages of the rhythm method.
    a) cycles can be irregular
    b) unreliable
    c) requires will power
4. Discuss method of spermicide contraception.
5. State effectiveness of spermicide.
    a) 80-96% used alone
    b) 99% if used with condoms
6. State at least two advantages of spermicide contraception.
    a) no prescription needed
    b) can be purchased at pharmacies regardless of marital status or medical history
    c) good for backup with condoms or diaphragm
    d) does not affect fertility
7. State at least two disadvantages of spermicide contraception.
    a) can interrupt the couple
    b) may prove irritating for some women
8. Explain means of contraception by the use of condoms.
9. State effectivenss of condoms.
    a) 80-99% used alone
    b) 99% used with spermicide
10. State advantages of contraception by condoms.
    a) only method that helps prevent spread of VD
    b) non-prescriptive, available at pharmacies regardless of sex, marital status or medical history
    c) safe, will not impair fertility
    d) no medical side effects
    e) inexpensive
    f) when used with spermicide is as effective as the pill
11. State one disadvantage of contraception by condoms.
    a) dulls sensation for male
    b) can interrupt couple

12. Discuss contraception by use of diaphragm.

13. State method of obtaining diaphragm.

    a) physician must determine fit and prescribe
    b) must be refit if female gains or loses ten pounds and after female has a child, aborts, or miscarries.

14. State effectiveness of diaphragm.

    a) 85-97% effective if used correctly

15. State one advantage of diaphragm.

    a) no side effects
    b) will not affect fertility
    c) inexpensive

16. State one disadvantage of the diaphragm.

    a) woman may not like to insert
    b) risk of pregnancy

17. Explain the use of the Intrauterine Device (IUD)

    a) not certain why it works
    b) inserted into uterus by physician
    c) female checks that IUD is in place
    d) removed only by physician

18. State the effectiveness of the IUD.

    a) 96-99% effective if in place

19. State two advantages of the IUD.

    a) does not affect fertility
    b) minimal responsibility after insertion
    c) not felt by either partner
    d) one initial cost

20. State two disadvantages of the IUD.

    a) side effects such as heavier flow, painful cramping and some spotting (usually for three months)
    b) uterus may expel--especially if female has not been pregnant before

c) increases chance of infection, vaginitis
d) must be inserted, monitored and removed by a physician

21. Describe how the pill works as a contraceptive.

a) prevents the ovary releasing an egg

22. Describe use of the pill.

a) pills taken orally
b) take first one on 5th day of period
c) take at approximately the same time each day
d) take for 20 to 21 days consecutively until package is finished
e) period will begin 3-4 days after finishing package
f) directions vary with brand

23. State the effectiveness of the pill.

a) 99% effective with correct use

24. State two advantages of the pill.

a) lighter shorter period
b) does not interfere with sex act
c) cycles are regular and predictable
d) patient needs an exam and pap smear each year for new pills

25. State two disadvantages of the pill.

a) minor side effects such as nausea, vomiting, depression, headaches, slight weight gain
b) many people cannot or should not take the pill due to their medical history
c) some major side effects

26. State danger signals that may occur from the use of the pill.

a) blurred vision
b) dizziness
c) persistent headache
d) leg pains or numbness

27. Discuss the types of surgical sterilization for females.

a) hysterectomy--the removal of uterus
b) the closing of the fallopian tubes

28. Discuss surgical sterilization for males.

    a) vasectomy--severing the sperm duct

29. State one advantage of sterilization.

    a) 100% effectiveness
    b) one time procedure

30. State one disadvantage of sterilization.

    a) permanent--not reversible
    b) women's procedure has same hazards as any major operation

IX. Pregnancy

1. Cite signs of pregnancy.

    a) failure to menstruate
    b) enlargement of breasts
    c) occasionally a disinclination for food
    d) sometimes a feeling of nausea on arising in the morning

2. Explain the necessity of going to a doctor as soon as pregnancy is suspected.

3. Discuss why doctors emphasize the absolute importance of early pre-natal care.

4. Describe and discuss the hazards of not seeking pre-natal care.

    a) untreated women may have a variety of health problems that affect babies
    b) untreated women have two or three times as many premature babies than women who have pre-natal care
    c) premature babies have many more problems with physical and mental development than do full-term babies
    d) unfortunately, many of these untreated mothers are teenagers, and they need extra help during pregnancy
    e) girls as young as 15 or 13 or even 12 years of age may be physically able to become pregnant, but they and many other young mothers still have not completed their adolescent growth

5. Explain why only a doctor is qualified to set up a special health care program tailored to the indiviudal.

   a) makes out tests
   b) outlines a diet
   c) sometimes prescribes supplements such as iron, vitamins or other medications
   d) discusses exercise and rest
   e) discusses patient's smoking habits
   f) discusses general health of woman

6. Explain why it is important that any woman who is in an accident or is sick should tell the doctor that she is or may be pregnant so that he can use his judgment about X-rays.

7. Discuss why a pregnant woman must avoid even the most innocent kind of self-medication, unless her doctor indicates otherwise.

   a) no baking soda for upset stomach
   b) no vitamin pills except those prescribed
   c) no reducing pills
   d) no tranquilizers
   e) no pep pills
   f) no medicine
   g) laxatives

8. State the importance of strictly following a doctor's orders during pregnancy.

9. Identify danger signals during pregnancy.

   a) swelling of extremities
   b) sudden vaginal bleeding
   c) severe headaches
   d) blurred vision
   e) severe pain
   f) dizziness
   g) sudden weight gain
   h) persistent vomiting
   i) gush of water from vagina
   j) chills and fever

10. Discuss proper care during pregnancy.

    a) eat balanced and nutritional meals
    b) watch weight
    c) drink a lot of fluids
    d) walk and get plenty of fresh air

- e) get sufficient sleep
- f) carry out normal activities
- g) have dental checkups
- h) practice good grooming and hygiene

11. Discuss minor discomforts during pregnancy.

- a) constipation
- b) heartburn
- c) morning sickness
- d) trouble sleeping at end of pregnancy
- e) vaginal discharge and/or infection

12. List and discuss various myths about pregnancy.

- a) explain the myth that it is the woman who determines the sex of the child
- b) explain the myth that the fetus sleeps all day and picks the night to start kicking
  - 1) pregnant women believe that the fetus takes a malicious delight in keeping them from sleeping
  - 2) on the contrary, the fetus lives completely in the dark and cannot tell the time
  - 3) if it seems to move more at night, it is possible that the woman is more likely to feel its movement in the stillness of the night with nothing to distract her
- c) explain the myth that a bad tooth should not be pulled during pregnancy
- d) explain why it is a myth that a pregnant woman must eat for two
  - 1) during pregnancy a woman must supply all of the proteins, minerals, and vitamins for herself and for the developing fetus
  - 2) her requirements for most nutrients increase about thirty per cent for the fourth, fifth, and sixth months, and about fifty per cent for the remaining months
  - 3) her need for calories increases only about ten per cent
- e) explain the myth that you always get fat when you're having a baby
- f) explain the myth if you had no trouble with prenatal care for your first baby, you will be safe with later ones
- g) explain the myth that you lose a tooth for every baby

- h) explain the myth that if you drink wine, it will make good blood
- i) explain the myth that the baby will choke to death by the cord if you exercise
- j) explain the myth that what you look at will mark your baby
- k) explain the myth that a fall or blow will surely bring a miscarriage
- l) explain the myth that what you eat and drink does not matter
- m) explain the myth that it does not matter how much salt you use
- n) explain the myth that grandmother, mother, aunt or an older person can tell you all you need to know about pregnancy
- o) explain the myth that what you listen to will change your baby
- p) explain the myth that what you think about will hurt your baby
- q) explain the myth that it's your fault if your baby is born with a defect

X. Labor and Delivery

1. Discuss necessary preparations for going to the hospital.

    - a) mother's clothing
    - b) baby's clothing

2. State signs of labor.

    - a) regular contractions every 15-20 minutes
    - b) the bag of waters may break
    - c) bloody vaginal show
    - d) call doctor when any of these occur

3. Explain the various types of delivery.

    - a) spinal
    - b) general anesthesia
    - c) natural childbirth
    - d) Lamaze method

4. List and explain types of problem deliveries.

    - a) Caesarean birth
    - b) breech birth
    - c) placenta privia
    - d) dry birth
    - e) multiple births

5. List and discuss the stages of labor.
   - a) first stage--from beginning of contractions to complete dilation of the cervix
   - b) second stage--anesthesia given, birth of child (include apesiatomy)
   - c) third stage--infant is born, cord is cut, afterbirth is removed, contraction of uterus

XI. Post-natal Care

1. Discuss the physical considerations and care needed for the mother.
   - a) healing of vaginal stitches
   - b) return of the uterus to normal size
   - c) resumption of period
   - d) consider further family planning
   - e) post-natal medical checkup (4-6 weeks after birth)
   - f) resumption of sexual relations

XII. Abortion

1. Give various definitions for the term "abortion."
   - a) the interruption of pregnancy before the fetus has grown sufficiently to live outside the mother's body
   - b) the termination of pregnancy at any time before the fetus has attained a stage of viability, i.e. before it is capable of extrauterine existence
   - c) the premature expulsion of the products of conception, such as the fertilized egg, the embryo or the nonviable fetus
2. Explain the related terms "miscarriage" and "premature birth"
   - a) miscarriage refers to an interruption of the fetus within the first six months of development. This is also called abortion
   - b) premature birth refers to an interruption of the fetus beginning with the seventh month of development
3. Discuss criminal or illegal termination of pregnancy by:
   - a) unskilled doctors or other persons, OR
   - b) self-administration of various lethal solutions

4. Discuss the causes of spontaneous abortions.

    a) poor health of the mother, which may include:
        1) severe malnutrition
        2) nephritis
        3) diabetes mellitus
        4) tuberculosis endometritis
    b) some complications of pregnancy

XIII. Crises in the Family

1. Discuss the universality of crises in haman relationships.

2. Describe the types of crises which can arise in a family.

    a) those crises experienced by everyone
    b) social stigmas of various kinds

3. Discuss common familial crises.

    a) loss of economic support
    b) severe prolonged illness
    c) crises arising from family conflict situations
        1) personal conflicts within the family
        2) unplanned children
        3) infidelity
    d) bereavement
    e) divorce

4. Discuss crises which sometimes involve social stigmas.

    a) alcoholism
    b) illegal activities; children become delinquent
    c) pregnancy of unmarried offspring
    d) shock of adjusting to birth of an abnormal child
    e) sterility

XIV. Divorce

1. Define divorce (legal termination of marriage).

2. Discuss causes of divorce.

3. Describe when or if he feels a divorce is justified.

4. Describe results of divorce.

    a) individual need for re-adjustment
    b) re-adjustment of one's concept of self
    c) re-adjustment of personal habits, finances, social life

  - d) effects on children
  - e) effects on society

5. Define annulment. (Legal decree that makes a marriage void and in effect declares that it never existed).

6. List factors which could constitute annulment of marriage.

  - a) marriage without consent of one party
  - b) intoxication at time of marriage
  - c) falsification of age on marriage
  - d) fraud
  - e) other

XV. Family Counseling

1. List various sources which would be of help to families in the following crises:

  - a) marital problems
  - b) drug related problems
  - c) alcohol related problems
  - d) financial problems
  - e) child care problems
  - f) employment problems
  - g) behavior problems
  - h) mental health problems
  - i) educational problems
  - j) health problems
  - k) social services problems

THE
VERMONT
GUIDE

chapter 2

Around the Home and On the Job

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FOOD PREPARATION

A significant number of disadvantaged and handicapped individuals come from deprived environments where the quality of food may be poor and the quantity of food nutritionally unbalanced. For this reason, it is very important for these individuals to develop an understanding of what constitutes well-balanced, nutritional meals.

Lessons in food and nutrition should be very practical. Students should actively participate in buying, preparing, and serving foods that are economical, nutritional, and easily prepared.

Motiviational Activities

1. Have students prepare their own cookbooks.
2. Play Nutrition Bingo - This game may be obtained from Gillom Book Company, Kansas City, Missouri 64124 ($5.25).
3. Create crossword puzzles of food terms.
4. Prepare bulletin boards of well planned menus.
5. Take newspaper shopping trips.
6. Make interesting items such as butter, buttermilk, ice cream.
7. Make up tasting panels for comparing foods.
8. Give teas, host parties and meals.

FOODS AND NUTRITION

BOOKS

Cronan, M. L., & Atwood, J. First foods. 809 Detweiller Drive, Peoria Illinois 61614: Charles A. Bennett Co., Inc., 1971.

TEXTS/WORKBOOKS

Be informed series. Be Informed on Nutrition (Unit 18). Box 131, Syracuse, New York 13210: New Readers Press.

Be informed series. Be Informed on Using Measurements (Unit 13). Box 131, Syracuse, New York 13210: New Readers Press.

Cobb, V. Science experiments you can eat. East Washington Square, Philadelphia, Pennsylvania 19105: J. B. Lippincott Company, 1974.

Egg carton nutrition. Duplication Services, Martha Rensselaer Hall, Cornell University, Ithica, New York 14850.

Hedstrom, N. Lets eat. 111 Barron Avenue, Johnstown, Penn. 15906: MAFEX Associates, Inc., 1974.

Knauer, K., Knauer, M., & Knauer H. Metricook. Gallery House, 1106 Lawrence Street, Los Angeles, California 90021: 1974.

Parents Nursery School. Kids are natural cooks. 110 Tremont Street, Boston, Mass. 02107: Houghton, Mifflin Publishing Co., 1974.

Ray, Peggy. Peggy's Picture Book. 111 Barron Avenue, Johnstown, Pennsylvania 15906: MAFEX Associates, Inc., 1974.

Shenk, C. Sue learns about the use of measurement in cooking. 324 Liverpool, New York: Frank E. Richards Publishing Co., Inc.

Spitze, H. T., & Rotz, P. We are what we eat. Post Office Box 2028, Austin, Texas 78767: Steck-Vaughn Co., Inc., 1966.

Steed, F. R. A special picture cookbook. 13249 Northup Way, Bellevue, Washington 98005: Edmark Associates.

Weaver, A. Young homemaker at work series. Getting Ready to Cook. 6 Davis Drive, Belmont, California 94002: Fearon Publishers.

Weaver, A. Young homemaker at work series. Planning Meals and Shopping. 6 Davis Drive, Belmont, California 94002: Fearon Publishers.

Weaver, A. Young homemaker at work series. The Young Homemakers Cookbook. 6 Davis Drive, Belmont, California 94002: Fearon Publishers.

PAMPHLETS

Source: Betty Crocker Kitchens, General Mills, Inc., 9200 Wayxata Boulevard, Minneapolis, Minnesota 55440

Cooking with Betty Crocker mixes (large type edition).
Merry muffin making.
Cookie wise.
How and why of packaging.
Better biscuits.

Source: American Institute of Baking, 400 East Ontario Street, Chicago, Illinois 60611.

Food and you.
The wonder of you.

Source: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Key nutrients--Food for young families.
Peanut butter.
Cheese.
Fish.
Beef and pork.
Dry beans.
Rolled oats.
Poultry.
Eggs.
Selecting and buying food.
Meal planning made easy.
Principles of cookery.
Eat to live better.

Source: Consumer Service Department, Ball Brothers Co., Inc., Muncie, Indiana.

Canning and freezing sketchbook.
Successful home canning.
The science of food preservation.
The Ball blue book.

Source: Home Economics Department, Proctor & Gamble, P.O., Box 14668, Cincinnati, Ohio 45214.

Better baking.
Proper frying.

Source: Cooperative Extension Service, New York State College of Home Economics, Cornell University, Ithica, New York.

(Booklets and aids in food and nutrition available).

Source: U.S. Department of Agriculture & Health, Education & Welfare, Washington, D.C.

Food is more than just something to eat.

Source: National Livestock & Meat Board, 36 South Wabash Avenue, Chicago, Illinois 60603.

(Booklet on meat publications and visual aids).

Source: Wearever Kitchen Cook School, Chillicothe, Ohio 45601.

Lessons on cookware, bakeware and cutlery.

FILMSTRIPS

Source: Betty Crocker Kitchens, General Mills, Inc., 9200 Wayxata Boulevard, Minneapolis, Minnesota 55440.

Easy as pie.
Yeast breads.
Beautiful cakes.
Cookie wise.
Convenience cooking.
Modern cookery, instantized.
Muffin making.
Biscuits plain and fancy.
Packaging.
Flair with frostings and desserts.

Source: Classroom World Publishing Co., Inc., C/o Bank R Education Inc., 404 Admiral Boulevard, Kansas City, Mo. 64106.

a. Modern Home Economics Food Cassette Unit

503-1 The teenager and obesity.
503-2 Food facts and false claims.

503-3 Diet variety for health.
503-4 Better meals for your money.
503-5 ABC's of canning.
503-6 Freezing facts for the homemaker.

b. Modern Home Economics Home Management Cassette Unit

505-1 How to buy fresh fruits.
505-2 How to buy canned and frozen food.
505-3 How to buy meat for your freezer.
505-4 Budgeting for the family.
505-5 How to buy fresh vegetables.
505-6 Labor saving hints for the homemaker.

GAMES

Source: American School Food Service Association, 4101 East Iliff, Denver, Colorado 80222.

Yummy rummy game.
Activity fun with foods.

Source: Communication Specialist, Expanded Nutrition Program, Ceres Hall, Room 210, Cooperative Extension Service, North Dakota State University, Fargo, N.D. 58102.

Meals bingo (by Crocket, S. J.)

Source: Didactron, Inc., Box 1501, Ann Arbor, Michigan 48106.

Soup's on.
Wheels.

Source: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

The four food groups for better meals game.

OTHER

Source: Dairy Council in your state for a variety of food aids and pamphlets.

FOOD AND NUTRITION

Terminal Performance Objective:

After completing prescribed learning activities the student, when provided the necessary equipment and supplies, will be able to prepare a nutritional meal. The student will state the nutritional value of food items. All skills must be demonstrated to the satisfaction of a qualified instructor.

I. Nutrition

1. Explain the need for sound nutrition in relation to good health.
2. Explain what constitutes a "well-balanced" meal.
3. List three of the basic nutrients from memory:
    - a) proteins
    - b) carbohydrates
    - c) fats
    - d) minerals
    - e) vitamins
    - f) water
4. List five common foods which are high in nutrients.
5. State minimum information about each nutrient.
    - a) protein
        1. chief body builder
        2. found most often in meat and milk group
    - b) carbohydrates
        1. supplies quick energy
        2. three forms: starches, sugars, bulk (cellulose)
    - c) fats
        1. supply energy
        2. insulate body (example: margarine, salad dressing, cooking oil)
    - d) common minerals
        Give strength and rigidity to body tissues:
        1. calcium
        2. iodine
        3. iron

e) common vitamins
Release energy from foods.

1. A.
2. D
3. C
4. B vitamins

f) water
1. essential to life
2. aids digestion

6. Explain unique nutrition needs of certain age groups:

   a) adolescents
   b) babies
   c) pre-schoolers
   d) senior citizens
   e) pregnant and lactating women

7. List basic four food groups.

8. Explain need for maintaining desirable weight.

9. List five causes of obesity:

   a) poor diet
   b) lack of exercise
   c) impulsive eating
   d) eating between meals
   e) combination of above

10. Describe various programs for losing weight:

   a) Diet Workshop, TOPS, Weight Watchers
   b) isometric exercises
   c) eating less
   d) exercising more
   e) food decrease and activity increase

11. Recognize the need for weight control in terms of:

   a) appearance and grooming
   b) general health
   c) exercise and weight
   d) related specific diseases (heart, diabetes, etc.)

12. Explain the meaning of "calorie" in terms of what "too many" or "too few" calories can do to you.

13. Explain what sensible dieting is.

14. Explain what "fad diets" are and how they affect health.

15. List 5 food types which are nutritious but low in calories.

16. Plan nutritious low calorie meals for one week.

17. List several "safe snack foods".

18. Keep an individual record of weight loss and gain.

19. Read weight on two types of scales.

    a) doctor's scale
    b) conventional bathroom scales

20. Explain terms associated with weight control.

    a) overweight
    b) underweight
    c) malnourished
    d) obesity

21. List sources of free and accurate nutrition information:

    a) County Extension Home Economist
    b) School of Home Economics
    c) National Dairy Council

II. Basic Four - Milk Products

1. Identify 5-10 diary products.

2. Explain where dairy products come from and basic operations used to make dairy products.

3. Explain the value of eating and drinking dairy products.

4. Sample four dishes using dairy products.

5. Determine when dairy products are spoiled.

6. Identify daily serving needed for balanced diet.

7. Explain the different categories of:

    a) milk
    b) cheese
    c) butter
    d) cream

8. State proper storage for dairy products.

III. Basic Four - Meats and Meat Substitutes

1. Identify foods found in meat group.

    a) meats
    b) poultry
    c) fish and shellfish
    d) eggs
    e) dried peas and beans
    f) nuts

2. Identify the number of servings required per day from the meat group.

3. List 5-10 cuts of meat.

4. Explain the nutritional benefits of eating meat.

5. State various methods of meat preparation.

6. Identify tender and less tender cuts of meat.

7. Explain how to choose the best cut of beef.

    a) government label
    b) marbelized
    c) deep red color
    d) cut of meat

8. Explain how to choose the best poultry.

    a) read government label for inspection stamp
    b) check appearance
    c) date on label

9. Explain how to choose the best pork.

    a) check for inspection stamp
    b) check for fat as compared to lean
    c) check if flesh is firm and pink in color

10. Explain how to choose the best fish.

    a) check for USDA label
    b) check for bad odor
    c) check how fresh fish is being refrigerated

11. Determine amount of meat needed per person for a meal when using:

    a) boneless meats
    b) meat with bones
    c) canned meats

12. List a variety of meats.

    a) liver
    b) kidney
    c) heart
    d) brains
    e) sweetbreads

13. Compare costs per serving of different meats.

14. Compare costs and nutritional value of meat substitutes.

15. Explain proper storage of meats.

IV. Vegetables and Fruits

1. List five examples of fruits and vegetables.

2. Explain the benefits of eating vegetables and fruits.

3. Identify minimum daily requirements of fruits and vegetables.

4. Compare fresh, frozen and canned vegetables in the following ways:

    a) taste
    b) color
    c) texture
    d) nutritional values

5. Compare fresh, frozen and canned fruits in the following ways:

    a) taste
    b) color
    c) texture
    d) nutritional values

6. Explain the best time to buy certain fruits and vegetables:

    a) in season
    b) on sale
    c) in quantity

7. Explain what to look for when buying fresh fruits and vegetables:

   a) crisp
   b) bright color
   c) free from bruises
   d) firm

8. Prepare fresh fruits and vegetables for eating.

9. State proper storage of fresh fruits and vegetables.

V. Bread and Cereal Group

1. Explain the nutritional benefits of eating breads and cereals.

2. Identify five common bread and cereal products.

   a) breads - white, wheat, rye, etc.
   b) cooked cereals
   c) ready-to-eat cereals
   d) cornmeal
   e) crackers
   f) macaroni and spaghetti (pasta)
   g) rice
   h) rolled oats
   i) quick breads
   j) other baked goods

3. Identify the minimum daily requirements for breads and cereals.

4. Taste bread and cereal products.

5. Identify spoilage (mold).

6. Store properly to prevent spoilage and nutrient loss.

VI. Meal Planning

1. List daily food requirements according to the Basic 4.

2. Plan a day's meals according to the Basic 4 requirements.

3. Plan menus for a family for a week.

4. Include a variety of foods each day and from day to day. Introduce a new food from time to time.

5. Vary flavors and textures. Contrast strong flavor with mild, sweet, with sour. Combine crisp textures with smooth.

6. Try to have some meat, poultry, fish, eggs, milk, or cheese at each meal.

7. Make a collection of nutritious recipes that the family enjoys and serve them often.

8. Plan foods with color--a slice of red tomato, a sprig of dark greens, or other garnish.

9. Combine different sizes and shapes of food in a meal, when possible.

10. Use recipes which include leftovers from previous meals.

11. Distinguish between high and low cost meals.

12. Keep food budget in mind.

VII. Shopping for Food

1. Make a grocery list from menus.

2. Check specials in newspaper.

3. Clip coupons from magazines and newspapers.

4. Determine quantities to purchase.

5. Compare costs of brands and product sizes using unit pricing labels.

6. Locate the following information on labels or packages:

   a) name of item
   b) style of pack (whole, crushed, etc.)
   c) brand name
   d) weight, volume, or quantity
   e) number of servings
   f) ingredients
   g) nutritional value, if possible

7. State rules of shopping etiquette:

   a) return products to proper shelf
   b) do not block aisles
   c) do not open or break seals on packages, jars, etc.
   d) do not damage fresh foods

8. Identify faulty packaging:
    - a) dents
    - b) rust
    - c) breaks

VIII. Food Storage

1. Identify common food wraps and containers.
    - a) baggies
    - b) foil
    - c) wax paper
    - d) freezer paper
    - e) plastic wrap
    - f) plastic container
    - g) air tight containers
    - h) jars

2. Explain how to use each type of wrap.

3. Explain reasons for covering food and for using containers.
    - a) maintains freshness
    - b) prevents mold, bacteria increase
    - c) keeps flies and other insects from depositing disease

4. Use the best wrap depending on the food to be stored.

5. Prepare food for storage.
    - a) wash
    - b) separate or slice

6. Describe best place to store common foods.
    - a) refrigerator
    - b) cabinet
    - c) freezer

7. Identify spoiled foods:
    - a) rancid odor
    - b) slime on meat surface
    - c) fermentation of fruit juices (yeast)
    - d) sour taste in bland foods

8. Act in precautious manner with "bubbly" or damaged cans.

9. Refrain from refreezing foods.

10. Use refrigerated foods soon after storage.

11. State how long frozen meats and foods will keep.

12. Explain appropriate storate of following foods:

    a) breads
    b) cereals, flours, sugar, spices
    c) dry mixes (cakes, pancake, etc.)
    d) eggs
    e) fats and oils
    f) fruits (fresh, canned to be frozen)
    g) meats, poultry, fish
    h) milk, cream, cheese
    i) vegetables (fresh, canned, to be frozen)
    j) other

IX. Measurement

1. Identify:

    a) measuring spoons
    b) measuring cups - liquid
    c) measuring cups - dry

2. Explain when to use each type of measuring utensil.

    a) small amount
    b) large amount
    c) liquids
    d) solids

3. Explain special considerations when measuring.

    a) pack brown sugar
    b) pack shortening
    c) level with a metal spatula
    d) stick butter has measurements on label
    e) measure all ingredients before adding them together

4. Make the following measurements.

    a) 1 tsp
    b) 1/2 tsp
    c) 1/4 tsp
    d) 1 T
    e) 1/4 cup
    f) 1/2 cup
    g) 1/3 cup
    h) 1 cup
    i) 1-1/2 cup
    j) 1-1/4 cup
    k) 1-3/4 cup
    l) 2 cups

DRY MEASURE

5. Select and prepare for use:

  - a) utensil for measuring
  - b) metal spatula
  - c) spoon
  - d) bowl for measured ingredient
  - e) ingredient to be measured

6. Spoon ingredients into measuring utensil.

7. Measure over sink or papered counter.

8. Fill to desired amount.

9. Level off any excess with metal spatula.

10. Place in bowl, set aside and measure next ingredient.

LIQUID MEASURE

11. Select and prepare for use:
    - a) utensil for measuring
    - b) bowl for measured ingredient
    - c) liquid to be measured

12. Slowly pour liquid into measuring utensil.

13. Fill to desired amount.

14. Place small amount into bowl and set aside.

15. Place liquids in measuring cups on level surface and read measurement at eye level.

16. Adjust amount by adding to or pouring out if necessary.

17. Pour into bowl and set aside and measure next ingredient.

18. Identify and select:
    - a) quarts
    - b) pints
    - c) gallons
    - d) cup

19. Give abbreviations for:
    - a) quarts
    - b) pints
    - c) gallons
    - d) cup
    - e) tablespoon
    - f) teaspoon

20. Explain equivalents for:

a) 1 cup = 1/2 pint
b) 2 cups = 1 pint
c) 4 cups = 2 pints = 1 quart
d) 2 quarts = 1/2 gallon
e) 4 quarts = 1 gallon

X. Kitchen Utensils

1. Identify the following utensils:

a) cookie sheet
b) cake pans
c) bundt, angel food pans, spring form pans
d) loaf pan
e) pie plates
f) sifter
g) rolling pin
h) biscuit cutter
i) spatulas - metal and rubber
j) mixing bowls
k) casseroles
l) pastry cutter
m) paring knife
n) slicing knives
o) dinner knife
p) dinner fork
q) salad fork
r) teaspoon
s) tablespoon
t) soup spoon
u) serving spoon
v) ladles
w) butter knife
x) sugar spoon
y) tea kettle
z) saucepans (vary in size)
aa) fry pans
ab) double boiler set up
ac) slotted spoon
ad) kettles (vary in size)
ae) broiling pan
af) kitchen shears
ag) vegetable peeler
ah) collander
ai) dish drainer
aj) pot holders
ak) hot pads
al) stainless steel storage bowls
am) hand-operated or electric can opener
an) cutting board
ao) cooling racks
ap) salad or dessert molds
aq) custard cups
ar) grater
as) pancake turner
at) muffin pans
au) blenders
av) egg beater or rotary beater
aw) electric mixer - hand or standard
ax) wire whip
ay) bottle opener

XI. Recipes

1. Explain these terms:

a) preheat
b) mash
c) saute
d) marinate

  - e) roast
  - f) recipe
  - g) simmer
  - h) baste
  - i) bake
  - j) cook
  - k) boil
  - l) parboil
  - m) dash
  - n) thaw
  - o) broil
  - p) dice
  - q) chop
  - r) shread
  - s) grate
  - t) drain
  - u) soak
  - v) contents
  - w) blend
  - x) mix

2. Identify the elements of a good recipe.

   - a) ingredients and amount listed together
   - b) yield
   - c) cooking time
   - d) step by step instructions
   - e) special considerations

3. Read recipes.

4. Follow a simple recipe.

XII. Snack Foods

1. Identify a variety of nutritious snack foods.

2. Discuss relative calorie content of various snacks.

3. Compare the nutritional value of various snacks:

   - a) ice cream
   - b) potato chips
   - c) fruit
   - d) vegetables
   - e) candy

4. Prepare snacks from fresh fruits or vegetables.

5. Prepare five nutritious snack foods:

   - a) cereal cookies
   - b) puddings and custards
   - c) milkshakes
   - d) cheese snacks
   - e) granola, or dried fruit snacks

XIII. Breakfast

1. State five foods which provide a nutritious breakfast.

2. Plan nutritious breakfasts for one week.

3. Prepare a nutritious breakfast.

4. Prepare a nutritious, quick breakfast.

5. Follow a recipe for preparing cooked cereals.

6. Follow a recipe for preparing eggs.

   a) hard or soft cooked
   b) scrambled
   c) poached
   d) fried

7. Follow a recipe for preparing breakfast breads.

   a) pancakes
   b) waffles
   c) french toast
   d) muffins

8. Prepare fruit or vegetable juice.

   a) frozen
   b) fresh
   c) canned

9. Prepare various hot drinks.

   a) cocoa
   b) coffee
   c) tea

10. Prepare various fruits.

    a) serve fruit with cereal
    b) serve fruit as side dish

11. Prepare various meats.

    a) bacon
    b) sausage
    c) other

12. State alternative breakfast foods.

XIV. Lunches

1. Plan nutritious lunches for a week.

2. Prepare soups.

   a) canned
   b) dried
   c) homemade
   d) frozen

3. Prepare sandwiches.
    a) hot
    b) cold
4. Prepare luncheon salads.
    a) vegetable
    b) fruit
    c) molded
    d) protein
5. Prepare luncheon casserole.
6. Prepare beverages.
    a) hot
    b) cold
7. Prepare appropriate desserts.
8. Prepare a complete nutritious lunch.

XV. Dinner (Supper)

1. State the common food groups comprising a nutritious dinner.
2. Plan nutritious dinners for one week.
3. Prepare common meat dishes.
    a) meat alone
    b) combination dishes
4. Prepare hot and cold vegetable dishes from:
    a) fresh vegetables
    b) frozen vegetables
    c) canned vegetables
5. Prepare rolls and breads.
    a) homemade
    b) frozen vegetables
    c) packaged
6. Prepare packaged foods.
7. Prepare dinner beverages.
8. Prepare desserts.

9. Prepare foods to be served at appropriate time and at appropriate temperature.

10. Prepare and serve a complete dinner.

XVI. Equipment for the Home

THE RANGE

1. Identify major accessories on an electric range.

   a) burners
   b) controls for burners
   c) oven
   d) controls for oven
   e) main plug for power source for entire stove
   f) controls for broiler
   g) storage drawer
   h) racks
   i) timer
   j) clock
   k) fan
   l) oven indicator light
   m) special features
   n) oven light

2. Identify major accessories on a gas stove which differ from those on electric ranges.

   a) pilot light for burners
   b) pilot light for oven
      (i) automatic
      (ii) manual
   c) removable pan or tray beneath burners
   d) metal grates
   e) gas ring
   f) major valve which shuts off gas to entire stove

3. List functions of the range.

   a) roast
   b) bake
   c) dry
   d) broil
   e) simmer
   f) boil
   g) fry
   h) warm
   i) deep fry

4. Identify appropriate control for each burner.

5. Identify controls for oven.

6. Adjust racks in oven before turning oven on.

7. Operate oven.

   a) select appropriate setting for item to be heated
   b) set timer and clock
   c) operate fan
   d) pre-heat before actually using oven
   e) check pre-heat indicator light before inserting any items to be baked or broiled
   f) turn oven off as soon as item is baked or broiled

8. Ignite pilot light for gas oven, if necessary.

   a) wooden kitchen matches should be convenient
   b) open oven and find pilot light slot
   c) turn oven control to "on" position
   d) quickly place lighted match over slot for pilot light
   e) pilot light will be visible
   f) turn gas off in oven immediately when pilot light fails to ignite
   g) have stove checked periodically by competent service man

9. Clean oven.

   a) follow instructions for self-cleaning ovens
   b) follow instructions for cleaning oven with commercial cleaners
   c) clean oven with combination of a selected all-purpose cleanser and vigorous scouring

10. Clean top of range.

   a) remove detachable parts from around each burner
   b) clean each burner separately with hot water and' cleaning agent
   c) remove all crumbs and undesirable material on or around top of stove
   d) clean controls cautiously in order to keep them in "off" position
   e) replace cleaned parts to each burner
   f) remove tray beneath burners (if applicable) and clean

THE REFRIGERATOR

11. Identify parts of the refrigerator.

12. Adjust controls for desired temperature setting.
13. Adjust control for defrosting.
14. Move shelves.
15. Store food in appropriate places in refrigerator.
16. Decide when refrigerator should be defrosted.
17. Follow manufacturer's directions for defrosting.
18. Defrost often to keep down electrical costs.
19. Clean when defrosting refrigerator or as needed.
20. Use mild soap and/or baking soda with water.
21. Use non abrasive tools and sponges and cloths.
22. Remove all food from refrigerator.
23. Turn refrigerator controls to "off" position.
24. Remove shelves and wash separately.
25. Remove hydrators and wash separately.
26. Wash interior of refrigerator, starting at the top.
27. Wash interior door panel.
28. Rinse interior well and wipe dry.
29. Replace shelves and hydrator.
30. Replace food.
31. Turn control to desired temperature and close door.
32. Clean exterior with warm sudsy water and a cloth, wipe dry.
33. Clean up spills as they occur.
34. Have repairs made as soon as needed.
35. Avoid using sharp tools when defrosting.

36. Place a container of charcoal or baking soda in refrigerator to eliminate odors.

37. Store refrigerator unplugged and take door latch completely off.

38. Open refrigerator door as little as possible.

39. Explain points to remember when buying refrigerators.

    a) decide size needed
    b) choose left or right side door openings according to placement in kitchen
    c) frost-free models
    d) size of freezers
    e) number of shelves
    f) special features in ice maker
    g) color

PORTABLE APPLIANCES - GENERAL USE AND CARE

40. Read use and care manual before using any appliance.

41. Store appliances correctly, away from water.

42. Explain wattage rating on appliance.

43. Turn appliance off whenever plugging into or disconnecting from an outlet.

44. Know where main switch is located for emergency.

45. Disconnect appliance and have checked if appliance ever gives shock.

46. Keep cords in good repair.

47. Avoid looping cords.

48. Keep use of extension cords at minimum.

    a) extension cord should be UL listed
    b) have appropriate wattage capacity
    c) never place under carpet
    d) check cords frequently

49. Explain manufacturers guarantee.

    a) discuss specific guarantee
    b) explain where to go for repairs

50. Explain warranty. Discuss specific warranty.

51. Explain the symbol "UL" (Underwriters Laboratories)

52. Explain the concept of watt.

53. Keep appliances accessible.

54. Store appliances for maximum use.

55. Select and operate a blender according to manufacturer's directions.

56. Select and operate a toaster according to manufacturer's directions.

57. Select and operate a portable hand mixer according to manufacturer's directions.

58. Select and operate a standard mixer according to manufacturer's directions.

59. Select and operate a corn popper according to manufacturer's directions.

60. Select and operate a waffle sandwich grill according to manufacturer's directions.

61. Select and operate an electric fry pan according to manufacturer's directions.

62. Select and operate hot trays according to manufacturer's directions.

63. Select and operate coffee makers according to manufacturer's directions.

64. Select and operate electric can openers according to manufacturer's directions.

65. Select and operate electric knives according to manufacturer's directions.

XVII. Commercial Grill

1. Identify the following:

   a) control dials
   b) grill surface
   c) grease tray
   d) grill stone
   e) automatic fire extinguisher

f) hood
g) fan switch
h) grill oil
i) spatula/turner

2. Identify the control dials for each side of grill.

3. Explain the number settings on the control dials.

4. Turn on exhaust fan.

5. Select proper temperature setting for each side of grill.

6. Allow grill to preheat.

7. Coat grill where necessary with grill oil.

8. Place food item on correct side of grill.

9. Scrape excess grease and food into grease tray when necessary.

10. Turn food item as needed.

11. Remove fully cooked food item.

12. Clean and care for commercial grill.

13. Scrape excess food and grease into grease tray while grill is still hot.

14. Use grill stone if food particles are burned on.

15. Wipe off grill with cloth while hot.

16. Allow grill to cool completely.

17. Pour out grease from tray after it has cooled.

18. Wash grease tray with soap and water.

19. Wash down sides and front of grill with soap and water.

20. Dry all areas with cloth.

21. Oil grill and cover when not in use for long periods of time.

FOLLOW SAFETY MEASURES

22. Refrain from leaning on grill.

23. Keep water away from heated grill.

24. Use chemical or CO_2 extinguishers only if grease fire occurs.

25. Follow operator's manual instructions.

26. Always turn exhaust fan on before using the grill.

XVIII. Fryolator

1. Identify:

    a) control dials
    b) fry baskets
    c) signal light
    d) cooking well
    e) heating elements
    f) basket drain rack

2. List uses of the fryolator.

    a) meats
    b) potatoes
    c) fish
    d) donuts

3. Turn on exhaust fan.

4. Place vat well into fryolator.

5. Turn control dial to proper setting for fat to preheat.

6. Place food in baskets.

7. Slowly lower basket into fat.

8. Hook baskets in place.

9. Allow food to cook completely.

10. Raise baskets and set on drain rack.

11. Dump food onto paper toweling.

12. Repeat procedures 6-11 until the desired amount of food is fried.

13. Clean and replace fat.

14. Turn control dial to "off" position.

15. Filter fat when cooling.

16. Replace filtered fat in cooking well.

17. Change fat as needed when:

    a) frying different types of food
    b) fat is old
    c) fat has foreign particles

18. Clean fryolator sides and control panel with soap and water, dry with cloth.

19. Remove fat from cooking well.

20. Wipe off elements and cooking well.

21. Wash well, with soap and water.

22. Rinse carefully, dry with a cloth.

23. Wash baskets with soap and water and dry with a cloth.

24. Explain why exhaust fan must be on before the fryolator is used.

25. Explain why one never gets water near an operating fryolator.

26. Add fat only before turning on controls.

27. Drain food before removing it from basket.

28. Read operation manual.

29. Keep hands, arms, and any other objects out of the cooking well.

30. Place baskets slowly into the cooking well.

CLOTHING CONSTRUCTION AND GENERAL SEWING

As living costs soar, many people will be restricted to a low clothing budget. The objectives of this unit are intended to give such individuals skills in the design and construction of clothing as a means to reduce clothing costs and to possess a better quality of clothing. Furthermore, the unit on decorative stitching, crocheting, and knitting can prepare the individual for productive use of leisure time or provide for possible supplemental income.

Motivational Activities

1. Conduct treasure hunt for sewing implements.
2. Display handsewed items.
3. Make patchwork pincushions.
4. Take field trips to fabric stores.
5. Organize fashion shows.
6. Practice hand stitches on burlap with rug yarn.
7. Visit clothing construction factories.
8. Make field trips to clothing stores to compare quality of clothing.
9. Play sewing bingo as a means to learn parts of sewing machine.
10. Earn a humorous operator's license for use of sewing machine.
11. Develop crossword puzzles for sewing terms.
12. Develop a progress chart.
13. Develop a bulletin board and a finish tree on which to hang pieces of material from completed garments.
14. Color bibs of various colors to determine complementary colors for hair and skin color.
15. Develop a sewing sample book. Have each student make a poster of her figure type and find samples of garments and swatches appropriate for her figure.

CLOTHING CONSTRUCTION AND GENERAL SEWING RESOURCES

BOOKS/TEXTS/WORKBOOKS

Anspach, K. The Why of Fashion. Iowa State University Press, Ames, Iowa 50010: University of Illinois, 1968.

Butterick Co., Inc. New Vogue Sewing Book. 161 Sixth Ave., New York, 13, New York.

Cunningham, G. The Singer Sewing Book. The Singer Co., Pub., 1969.

Golding & Stan. Clothing Construction: A Visual Approach, Instructor's Guide, New York, London, Sydney: John Wiley & Sons, Inc.

Hartley, E. T. Snip, Clip & Stitch. R. W. Parkinson & Associates, 704 Mumford Drive, Urbana, Illinois, 1965.

Iowa Home Economics Association. Unit Method of Clothing Construction. 5th Ed., Iowa State University Press, Ames, Iowa 50010. ($4.25)

McCall Corp. McCall's Tips for Easy Sewing. 230 Park Ave., New York, New York 10017: 1968. (75¢)

Simplicity Pattern Co., Inc. Simplicity Sewing Book. 200 Madison Ave., New York, New York 10016.

PAMPHLETS

Source: Simplified Sewing Techniques, Bulletins: Necchi Educational Dept.

1. Darning & Patching
2. Seam Finishes & Hems
3. Zippers
4. Collars

Source: E. I. DuPont De Nemours & Co., Inc. Textile Fibers Dept., 3116 Centre Road Bldg., Wilmington, Deleware 19898.

If You're Thinking Knit
Tips For Home Sewing

Source: Bulletin No. 13., Gold Seal Co., Bismark, North Dakota.

Stretch Fabrics

Source: Pellon Corp., Educational Dept., 1120 Ave. of the Americas, New York, N.Y. 10038.

Know Your Pellon Nonwovens

Source: Talon Educational Service, 41 East 51st St., New York, N.Y. 10022.

Learning About Thread

Source: Stacy Fabrics Corp., 469 Seventh Ave., New York, N.Y. 10018. Send for Educational Fact Sheets on:

Butterfly Lining
Under Current
Interlan
Newform
Durable Press

Source: David B. Carmer & Co., 205 West 39th St., New York, N.Y. 10018

Si Bonne Linings

Source: Extension Service U.V.M. Morrill Hall, Burlington, Vt. 05401. Write for list of various pamphlets.

FILMSTRIPS

Source: Sears, Roebuck & Co., Consumer Information Service, Dept. 703, Public Relations, 303 E. Ohio St., Chicago, Illinois 60611.

Young Fashion Forecast

OTHER

Right off the vest vine. Stitch In Time, Vol. 38, #2-S, Coats & Clark, Inc., Educational Bureau, 430 Park Ave., New York, N.Y. 10022

Motivational Projects. Talon Consumer Education, 41 East 51st St., New York, N.Y. 10022.

Zipper Reference File. Talon Consumer Education, 41 East 51st St., New York, N.Y. 10022.

The Invisible Zipper Learning Package. Unique Zipper Distributing Service, Education Dept., Number One Lethbridge Plaza, Mahwah, New Jersey 07430.

Learning Kit. Student Manuals, The Singer Co., Education Department, 20 Rockefeller Plaza, New York, N.Y. 10020

1. Touch & Sew Machines
2. Care & Regulate Sewing Machines
3. Zig-Zag Machine Sewing Parts I & II
4. Sewing Machine Attachments
5. Straight Stitch Machine Sewing

Twin State Educational Information, Montpelier, Vt. 05602
Microgiche: #466 Clothing Instruction Search.

CLOTHING CONSTRUCTION AND GENERAL SEWING

Terminal Performance Objective

Upon completion of the prescribed activities in this unit, the student will be able to follow the appropriate steps to complete a simple garment or sewing project. The finished article and the processes used in constructing it will be judged for accuracy, speed, and conformity to directions.

I. Sewing Equipment

1. Identify and discuss the use of the following sewing essentials:

    a) sewing shears
    b) tape measure
    c) common pins
    d) hand-sewing needles
    e) machine needles
    f) bobbin
    g) sewing machine
    h) pin cushion
    i) thread
    j) patterns
    k) zippers
    l) yard stick
    m) ironing board
    n) iron
    o) zip foot
    p) ironing board pad

2. Identify and discuss the use of the following optional sewing equipment:

    a) pinking shears
    b) skirt marker
    c) safety pins
    d) hem gauge
    e) tracing wheels
    f) electric scissors
    g) tracing paper
    h) chalk
    i) sleeve board
    j) tailors ham
    k) seam tape
    l) stretch lace
    m) bias tape
    n) thimble
    o) pounding block

II. Basic Hand Sewing Techniques:

1. Demonstrate the following techniques:

    a) thread needle
    b) tie knot in the end of thread
    c) hand basting
    d) tailors tacks
    e) hand gathering
    f) ham stitch
    g) back stitch
    h) blind or slip stitch
    i) catch stitch

III. Preparation for Machine Sewing

1. Identify machine parts by name or function.

    a) spool pin
    b) take-up lever
    c) pressure regulating dial
    d) threading chart
    e) presser foot
    f) throat plate
    g) presser foot lifter
    h) bobbin
    i) slide plate
    j) tension dial
    k) light
    l) stitch length selector
    m) hand wheel
    n) power and light switch
    o) bobbin winder thread post
    p) speed controller
    q) stop motion nut
    r) knee or foot lever

2. Control the machine.

    a) connect power source
    b) sit properly for stitching
    c) operate light and power stitches
    d) place practice paper under machine
    e) lower pressure foot
    f) place "hands down" for sewing
    g) control machine speed
    h) accurately follow lines on stitching guide
    i) remove practice sheet
    j) turn off machine

3. Operate the machine.

    a) assemble materials at machine
    b) select foot or knee lever
    c) turn on machine
    d) thread bobbin
    e) place bobbin in bobbin case
    f) thread bobbin case
    g) thread upper threading points
    h) raise bobbin thread
    i) position take up lever with hand wheel
    j) place scrap material for sewing
    k) lower presser foot
    l) place threads behind presser foot
    m) stitch a short distance and remove fabric

4. Clean and care for the machine.

    a) identify and use soft cleaning cloth
    b) identify and use lint brush
    c) identify and use sewing machine oil and lint brush
    d) remove lint and fluff from exposed parts
    e) clean machine surface with soft cloth
    f) clean certain parts with lint brush: feed dog, hook or thread-handling areas
    g) apply drop of sewing machine oil as directed in operator's manual
    h) sew a few lines to remove excess oil after oiling
    k) clean and oil area behind the face plate
    j) periodically oil and lubricate top of machine
    k) periodically oil and lubricate bottom of machine
    l) periodically oil motors (check machine instruction guide)
    m) clean machine as indicated in operator's manual before leaving
    n) keep small piece of fabric under pressure foot with needle through fabric to protect from damage
    o) lower table model into its case
    p) place portable machine in its case

5. Practice machine safety rules.

    a) never operate machine without proper instruction
    b) never operate a faulty machine
    c) unplug and store unit when not in use
    d) always keep hands away from needle when operating machine
    e) turn off machine when making adjustments on machine
    f) never plug in a frayed plug or cord

   g) hold machine securely when raising from or lowering into the cabinet
   h) never touch electrical connection with wet hands
   i) keep pins and needles away from operating parts
   j) other

IV. Selection of Materials for Sewing

1. Take measurements with tape measure.

   a) bust
   b) waist
   c) hips
   d) back length

2. Locate information in a pattern book.

   a) style numbers
   b) index
   c) pattern fitting information

3. Compare and determine his or her size with charts in pattern book.

4. Select pattern according to:

   a) difficulty of construction
   b) personal tastes
   c) size and shape
   d) current styles
   e) budget

5. Obtain patterns from store.

   a) find pattern drawers
   b) look for manufacturers name
   c) identify style number
   d) select pattern and size or:
   e) give pattern company, style number and size to sales person

6. Explain common terms on patterns.

   a) finished width of garment
   b) view
   c) width of fabric
   d) back length
   e) finished length
   f) for stretch knits only
   g) style

- h) notions
- i) yardage
- j) stay stitch
- k) baste
- l) nap
- m) trim
- n) contrasting

7. Locate and use the information provided on a pattern envelope

    - a) company name
    - b) style number
    - c) view number or letter
    - d) size
    - e) size chart
    - f) notions
    - g) general description
    - h) yardage needed and width of material
    - i) view
    - j) silhouette of style

8. Locate and identify guide sheet, special notes, lay-out directions, and construction directions enclosed in pattern envelope.

9. Remove pattern pieces and write name on each piece.

FABRICS

10. Identify common fabrics:

    - a) quilted
    - b) lace
    - c) knit
    - d) plain woven fabric
    - e) pile fabrics

11. Identify information found on a good label.

    - a) fiber used
    - b) shrinkage
    - c) color fastness
    - d) finishes
    - e) care and uses
    - f) width of fabric
    - g) special finishes
    - h) washing instructions

12. Identify information on individual fabric care labels.

13. Identify colors and fabrics suitable for figure, pattern, budget and season.

14. Explain meaning of words found on garment or clothing labels:

    a) permanent press
    b) preshrink
    c) 1% shrinkage
    d) colorfast
    e) crease resistant
    f) washable
    g) dry clean
    h) bonded
    i) boil fast
    j) drip-dry
    k) tumble dry

15. Prepare a shopping list from pattern.

16. Assemble ideas about what to purchase.

17. Go to fabric store, look at a variety of materials.

18. Check width of material.

19. Check price and descriptions on label.

20. Determine what fabric is needed.

21. Check for flaws in material.

22. Take bolt of material to salesgirl

23. State number of yards needed.

24. Select matching thread, buttons, zippers, trims and other notions.

25. Pay for materials.

26. Identify and locate:

    a) lengthwise threads in fabric
    b) threads in fabric crosswise
    c) off grain fabric
    d) on grain fabric
    e) grainline in fabric
    f) selvage
    g) bias
    h) cut edge

V. Pattern Layout and Cutting

1. Take out only those pattern pieces needed.
2. Cut pieces separately if necessary.
3. Pin major pieces together along seam line.
4. Try on pattern for estimated fit.
5. Unpin pattern.
6. Make necessary alterations in pattern.
7. Iron pattern if wrinkled.
8. Fit pattern on material using pattern lay out guide.
9. Find lay out for size of pattern and width of material.
10. Fold material as directed.
11. Place pattern pieces on fabric as directed.
12. Lay material on long flat table.
13. Smooth any bubbles out of material.
14. Measure for straight of grain where indicated.
15. Place pins vertically between sewing and cutting line.
16. Place fold arrows on fold of material.
17. Check for overlapping of pattern pieces.
18. Follow special directions for:
    a) nap fabric, plaids, and one-way designs
    b) cutting extra pieces
19. Pin all pattern pieces onto material.
20. Recheck all pieces for correct placement.
21. Cut out pattern, on solid line (cutting line); do not cut folds.

VI. Marking

1. Name and identify materials to be used in marking fabrics:

   a) pins
   b) tracing wheel
   c) tracing paper
   d) chalk (tailor's and blackboard)
   e) needles
   f) thread (for tailor tacks)

2. Prepare samples of material to be marked:

   a) lightweight
   b) heavy
   c) figured
   d) plain

3. Demonstrate marking techniques using:

   a) tracing wheel
   b) chalk
   c) tailor's tacks
   d) use one marking technique on:
      1) lightweight material
      2) heavy material
      3) figured material
      r) plain material
   e) discuss advantages and disadvantages of each marking method on the different kinds of fabrics.
   f) state which marking method shows most clearly
   g) state what happens to marking after fabric is washed
   h) determine appropriate method for marking garment
   i) mark pattern

VII. Constructing a Garment

1. Proceed with garment construction according to guide sheets.

2. Stay stitch.

3. Construct darts.

4. Observe directional stitching and sew seams.

5. Stitch inside seams of collars, facings, and cuffs.

6. Grade edges.

7. Clip curves.

8. Stitch to insert zipper.

    a) slot
    b) lapped
    c) invisible

9. Machine gather.

10. Ease.

11. Construct and insert sleeves.

12. Make button holes.

13. Fit garment and mark hem.

14. Complete alterations.

VIII. Making a Hem

1. Press garment.

2. Try on garment with shoes on.

3. Determine a becoming length for hem.

4. Stand still in position where hemline is at eye level of helper.

5. Use yardstick or skirt marker to mark proper distance of hem from floor.

6. Make adjustments.

7. Make necessary changes.

8. Pin and check hem.

9. Place garment wrong side up on flat surface.

10. Turn hem exactly on marked line.

11. Pin or baste close to folded edge.

12. Press.

13. Decide on width of hem.

14. Measure width of hem with scale, ruler, or cardboard gauge.

15. Make a line with pins or chalk to show top of hem.

16. Allow 1/4"to 1/2" for turned edge.

17. Cut away extra material above finishing line.

18. Fold under 1/4" to 1/2".

19. Stitch first turn of hem.

20. Fold edge a second time the desired width of finished hem.

21. Use ruler or other measure to keep width of hem even.

22. Pin or baste edge of hem in place.

23. Select appropriate hem for garment.

24. Hem by hand or machine stitch.

25. When first turn of hem is machine stitched, finish by using slip stitch.

IX. Mitering a Corner

1. Make first and second turns like plain hem on both of the two edges meeting at corner.

2. Press edges.

3. Open hem and turn back evenly on both--lengthwise and crosswise. Creases to right side.

4. Creases form a diagonal line from hem edges to corner.

5. Stitch on creased line.

6. Stitch from point to first turn on hem edge to corner.

7. Trim away surplus material to 1/8 inch of stitching line.

8. Press open.

9. Turn hem to wrong side.

10. Complete with either hand or machine stitching.

X Inserting Snaps

1. Select proper snap size. Sizes go from 0000-2.
2. Explain when snaps are useful.
    - a) place with no strain on fabric
    - b) flat fastening
    - c) never take place of button
3. Point out parts of snaps:
    - a) top, or ball
    - b) bottom, or socket
4. Explain position of each part. Ball sewed to part that laps over an opening. Socket on side that laps under.
5. Mark position of ball and socket.
6. Place 1/8" to 1/4" from edge of opening.
7. Sew close enough to prevent gaping.
8. Sew each part of snap to garment.
9. Use buttonhole or overhand stitch.
10. Take stitches over edge of snap in each hole.

XI. Inserting Hooks and Eyes

1. Select proper size hooks and eyes.
    - a) 0-15
    - b) small numbers mean small sizes
2. Identify two kinds of eyes.
    - a) straight
    - b) round
3. Distinguish function of eyes.
    - a) straight for edges that lap
    - b) round for edges that meet
4. Measure and mark for placement.

5. Place round eye slightly extended over edge.
6. Sew hook back from the opposite edge.
7. Sew straight eye back from edge of underlap.
8. Sew with curve of eye towards outer edge of lap.
9. Sew hook close to edge of overlap.
10. Use buttonhole stitch or overhand stitch.
11. Sew over edges of rings on both eye and hook.
12. Sew through top of hook several times to hold hook against fabric.

XII. Attaching Buttons

1. Select button for size, color and style.
2. Select needle to fit button and thread.
3. Thread needle with double thread.
4. Push needle and thread through from the back of the material.
5. Continue with thread and needle through one of the button holes from the back of the button.
6. Pull thread up snugly.
7. Run needle in from top of button down through material.
8. Pull thread taut.
9. Place pin under thread and repeat steps. Sew through each hole four or five times.
10. End with needle and thread on wrong side of material.
11. Push thread through material, but not through hole in button.
12. Wind thread around threads between material and bottom of button two or three times.
13. Put needle and thread back through material.

14. Make two small stitches on wrong side of material to end thread.

15. Cut thread.

XIII. Equipping a Sewing Box or Basket and Purchasing a Machine

THE SEWING BOX

1. Select standard shears and scissors for the following features:
    - a) screw rather than rivet
    - b) steel blades
    - c) comfortable to use

2. Select pinking shears.

3. Select scissors for trimming and clipping.

4. Select pins (sharp points, non-rusting)

5. Select needles
    - a) variety of sizes
    - b) brass needles
    - c) fine, sharp points

6. Select thread.
    - a) assorted colors
    - b) usually size 50
    - c) mercerized

7. Select thimble
    - a) lightweight
    - b) fits finger snugly
    - c) made of silver, nickel, steel, or brass

PURCHASING A SEWING MACHINE

8. Settle on type to be purchased.

9. Inspect a variety of machines to help with decision.

10. Look for easy to use features.

11. Try out machines for good operation.

12. Consider easy to care for factors.

13. Inspect for long life design.

14. Learn about:

    a) service agreements
    b) certificates of guarantee

XIV. Repairing Work Garments

1. Demonstrate method of ironing patches on various fabrics.

    a) measure
    b) cut out patch
    c) make necessary heat control settings
    d) iron patch on wrinkle free and unscorched

2. Sew patches on various fabrics.

    a) measure
    b) cut patch
    c) press under 1/8" to 1/4" seam on patch
    d) sew patch on garment securely
    e) use appropriate stitch

3. Darn various damaged fabrics.

    a) select appropriate thread or wool
    b) select appropriate fabric for patch
    c) use darning egg if helpful

4. Repair ripped seams.

    a) select matching thread for fabric
    b) sew securely by hand
    c) sew on machine

XV. Creative Stitchery

EMBROIDERY

1. Select a design to embroider.

2. Select fabric.

3. Select yarns and threads in harmonious colors.

4. Select appropriate needles.

5. Determine stitches to create design.

6. Transfer design to fabric using commercial transfers or tracing paper.

7. Use an embroidery hoop to keep stitching flat.

8. Follow directions for making appropriate stitches to complete design. Examples of stitches:

   running, back, outline, chain, lazy daisy, french knot, satin, long/short, couching, cross.

9. Press work by placing face down on a terry towel and using steam.

CROSS-STITCHING GINGHAM

10. Choose embroidery motif.

11. Decide location of embroidery motif.

12. Mark starting point with pin.

13. Place area to be embroidered in hoop.

14. Start each motif on check indicated.

15. Knot end of thread.

16. Bring needle up through fabric from under hoop.

17. Follow design.

18. Count crosses.

19. Start new end of floss within design if needed.

20. Finish work on wrong side with small back stitch.

XVI. Crocheting

1. Select the appropriate yarn and hook.

2. Control tension of thread

   a) hold loosely
   b) hold tightly
   c) hold evenly

3. Crochet a chain by following teacher demonstration.

4. Practice until stitches come out evenly.

5. Demonstrate the basic crochet stitch by following teacher demonstration.

6. Demonstrate the double crochet stitch by following verbal and visual direction.

7. Slip chain together to form ring.

8. Demonstrate the single crochet stitch in rounds by following verbal and visual directions.

9. Finish one project using the basic crochet stitches.

10. Block the finished product.

    a) block parts of work before sewing together
    b) block woolen work
    c) block doilies and fine work

XVII. Knitting

1. Identify common knitting terms and abbreviations.

    a) k - knit
    b) p - purl
    c) inc - increase
    d) dec - decrease
    e) st -stitch
    f) tog - together
    g) sl - slip stitch to right needle without knitting
    h) p.s.s.o. - pass slip stitch over stitch following
    i) incl - inclusive
    j) rnd - round
    k) yo - yarn over

2. Identify tools:

    a) knitting needles by size
    b) yarn by ply
    c) stitch gauge (measuring)
    d) crochet hook by size
    e) ruler
    f) tape measure
    g) knit check (measures gauge and needle size)
    h) scissors
    i) tapestry needle
    j) knitting basket
    k) pattern directions

3. Explain various yarns.
    - a) name several different kinds of yarn
    - b) buy enough to make the complete article
    - c) yarn is wound in "skeins" or loosely in "hanks"

4. Explain five basic steps before starting to knit.
    - a) learn knitting abbreviations
    - b) always read directions step by step
    - c) make sure importance of gauge is understood
    - d) always finish a row before putting yarn down
    - e) know the two stitches used for all knitting
        - 1) knit
        - 2) purl

5. Demonstrate knitting procedures.
    - a) cast on stitches (according to pattern instructions)
    - b) knit stitches
    - c) purl stitches
    - d) combine stitches to form patterns
        - 1) garter stitch
        - 2) stockinette stitch
        - 3) ribbing
        - 4) other combinations
    - e) increase
    - f) decrease stitches
    - g) knit or purl stitches together
    - h) slip stitches
    - i) pass slipped stitch over following stitch
    - j) pick up dropped stitches
    - k) bind off completed article
    - l) sew up seams correctly
    - m) hold work correctly

6. Knit various articles.
    - a) pot holder
    - b) head band
    - c) slippers
    - d) cap
    - e) mittens
    - f) scarves

CHILD CARE

The processes of maturing, marrying, and having children are engaged in by most members of society, regardless of their mentality. Unfortunately, many disadvantaged and handicapped students have poor models for becoming good parents. This cluster is designed to meet this need by providing the student with an understanding of the physical, mental, social, and emotional growth of infants and preschool children. Emphasis is placed on such major needs as play, safety, illness, and discipline.

Motivational Activities

1. Children and infants of different ages can be brought in to compare various observable characteristics.
2. Students can make posters depicting development of infants from birth to one year. This activity can be expanded to include appropriate foods and clothing.
3. Visit by pediatrician or pediatric nurse.
4. Field trip to a well baby clinic, a nursery school or day care center.
5. Plan a children's party: food, entertainment, invitations, decorations, etc.; teacher can observe how students play with children.
6. Field trip to see variety of baby clothing and accessories.
7. Set up menus for babies and preschoolers.
8. In catalogue of toys, students can select those which are safe for all children.
9. The students can make toys or games for children.
10. Make a first-aid kit for home.
11. Students can practice bathing and dressing a doll.
12. Class can discuss accidents they had when young and explain how hazardous conditions can be avoided.
13. Visit a consumer protection agency to discuss and demonstrate hazardous and safe toys.

Resource Materials

Texts

Duvall, Evelyn Millis, and J. B. Lippincot, II ed. Family Development.

Gardner, D. Bruce. Development in Early Childhood. Harper & Row. 1964.

Spock, Benjamin. Baby and Child Care. New York: Pocket Books Inc.

Hurlock, Elizabeth. Child Growth and Development.

Hymes, James L., Jr. The Child Under Six. Englewood Cliffs, N.J.: Prentice Hall, Inc. 1961.

Chess, Stella, Alexander Thomas and Herbert Birch. Your Child is a Person. New York: Viking Press. 1965.

Pamphlets

Discipline, Shyness, Bed Wetting. Human Relations Aids,
419 Park Avenue South , New York, New York. 10016.

Fears, Discipline, Your Child Goes to the Hospital
Ross Laboratories, Columbus, Ohio.

You and Your Contented Baby. Carnation Co., Nutrition Research Division.

Johnson & Johnson, New Brusnwick, N.J. 08903.

Creative Playthings, Princeton, N.J. 08540.

A Safe Home for Your Children.
Selecting and Instructing Babysitters. Mead Johnson & Co.,
Evansville, Indiana. 47721.

The ABC's of First Aid. The Norwich Pharmocal Company,
Norwich, New York.

Accidents and Children. Children's Bureau Folder No. 48-1959. U.S. Department of Health, Education and Welfare, Supt. of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Sitting Safely. Edna Mae McIntosh, Gerber Products Company, Fremont, Michigan. 49412

Your Child and Household Safety. Joy M. Arena, M.S. Chemical Specialities Manufacturing Association, Inc., 50 East 41st Street, New York, New York. 10017

Look, Mom, I'm Eating. Published by H. J. Heinz Company, Box 28, D-16, Pittsburgh, Pa. 15230

Feeding Little Folks. National Dairy Council, Chicago, Ill. 60606

Food for Young Children. National Dairy Council, Chicago, Ill. 60606

Happy Mealtimes for Your Baby. Beechnut Baby Foods, Canajoharie, New York.

Facts about Breast Feeding. Mead Johnson & Company, Evansville, Indiana. 47721

Foods for Baby. Gerber Products Company, Fremont, Michigan, 49412

DHE Topics - 18. Teaching Child Development. Department of Home Economics, N.E.A. 1201 Sixteenth Street, N.W. Washington, D.C.

When Your Baby Is On the Way. Children's Bureau Publication No. 391. Your Baby's First Year. Children's Bureau Publication No. 400. U.S. Department of Health, Education and Welfare, Supt. of Documents, U.S. Government Printing Office, Washington, D.C. 20402

The following pamphlets from:
Consumer Information
Public Documents Distributing Center
Pueblo, Colo. 81009

044B	Prenatal Care (1973) $1.05
045B	Safe Toy Tips. Free
218B	So You're Going to be a New Father (1973) 50¢
048B	Toys: Fun In the Making. 45¢
220B	Young Children & Accidents in the Home (1974) 65¢
050B	Infant Care (1973) $1.00
051B	Your Child From 1-6 (1970) $1.05
052B	Your Child From 6-12 (1970) $1.15

The Preschool Years. State of New York, Department of Health Bureau of Maternal & Child Health.

Baby Book. State of New York, Department of Health, Bureau of Maternal & Child Health.

Keeping Baby Clean. Johnson & Johnson, New Brunswick, New York.

Your Baby. Metropolitan Life Insurance Company.

Understanding the Young Child (From 6-8, From 8-12). Metropolitan Life Insurance Company.

Twin State Educational Information System. Montpelier, Vermont 05602

Microfiche: Search No. 80 Teaching of Child Care
Search No. 267 Child Care

Films

"Toddless Hours of Hazard." Aetna Insurance Company

"Food as Children See It"

"Mealtime Can be Magic"

"Baths and Babies." (A free loan film, Johnson & Johnson).

CHILD CARE

Terminal Performance Objective:

After completing prescribed instructional activities the student will be able to bathe, feed and dress an infant; plan nutritious meals for children; select appropriate clothing, toys, and safety measures for the pre-school age child according to recommended practices.

I. Infant Development from Birth to One Year

1. Describe physical characteristics of infants.

2. Describe mental development of infants.

3. Describe social development of infants.

4. Describe emotional development of infants.

5. Describe language development of infants.

II. Major Needs of Infants

1. Discuss the importance of love for and total development of the infant.

2. Demonstrate bottle feeding.

   a) heat bottle to correct temperature for feeding
   b) demonstrate correct posture in which to hold baby
   c) explain importance of holding baby during feeding
   d) prop bottle if absolutely necessary
   e) reposition baby after a while for bubbling
   f) resume feeding once air surfaces
   g) use bib or diaper to prevent staining from formula and to keep baby clean
   h) describe signs which indicate that the baby is satisfied and is ready to stop the feeding
   i) list advantages and disadvantages of bottle feeding.

3. Discuss breast feeding.

   a) proper method
   b) advantages
   c) disadvantages

4. Feed solid foods.

   a) wash hands before feeding
   b) recognize a variety of strained foods
   c) position baby in arms or carrier
   d) recognize correct portion to give baby
   e) use spoon of suitable size for baby
   f) allow baby time between bites
   g) allow baby to finish feeding when full
   h) do not force food

5. Give a sponge bath.

   a) wash baby on lap
   b) wash baby on hard surface such as table
   c) pad table to prevent child from rolling
   d) hold baby securely and closely

- e) wash scalp and face with washcloth and clear warm water
- f) scalp can be soaped once or twice a week
- g) soap body lightly with washcloth or hand
- h) wipe soap off by going over baby with rinsed washcloth
- i) pay attention to baby's creases

6. Give baby a tub bath.

- a) prepare all necessary materials and place them close at hand
- b) give bath in washbowl, dishpan, sink, enamelware tub
- c) place dishpan or tub on table or dresser
- d) draw water at body temperature (90-100 degrees)
- e) test temperature with your elbow or wrist
- f) use a small amount of water at first until accustomed to holding baby securely
- g) line metal tub with diaper to prevent baby from slipping
- h) hold baby securely
    - 1) support head by wrist
    - 2) hold him with fingers of same hand under his arm
- i) wash face first, without soap
- j) wash scalp, without soap or soap scalp once or twice a week.
- k) wipe soapsuds off scalp with damp washcloth
- l) exercise care in not getting washcloth too wet
- m) soap rest of body
- n) use a soft towel for drying
- o) blot rather than rub
- p) oil or powder baby if desired
    - 1) dust powder on your hand away from baby
    - 2) rub gently on baby
    - 3) apply thinly
    - 4) use mineral oil, or commercial baby skin oil if baby has dry skin

7. Dress baby.

- a) explain desirable characteristics of children's clothing:
    - 1) easy fit
    - 2) suitable weight for baby's body temperature
    - 3) washable and soft
    - 4) safe: non flammable, free from dangerous ornaments
    - 5) simple

b) demonstrate methods of dressing using a variety of clothing
c) discuss and demonstrate various methods of diapering a baby

III. The Development of the Preschool Child (2-6 years)

1. Describe physical characteristics.

2. Describe mental development.

3. Describe social development.

4. Describe emotional development.

5. Describe language development.

IV. Major Needs of Preschool Child

1. Discuss proper eating habits.

    a) explain why meals should be served regularly
    b) place child comfortably in highchair or table
    c) serve attractive, nutritious, well-prepared food
    d) explain why one should permit children to take part in selection and preparation of food
    e) permit children to make decisions about meals
    f) food servings should not overwhelm child by their amount
    g) plan breakfast, lunch, and dinner menus for young children
    h) describe some "eating problems"
        1) dislike of certain foods
        2) refusal to eat
        3) playing with food
        4) emotional upset disturbs appetite
        5) imitation of other children refusing food

2. Discuss proper bathroom routines.

    a) demonstrate how to help child use towel, washcloth, and soap
    b) describe desirable methods of toilet training
    c) demonstrate and encourage dental hygiene
    d) discuss necessity for daily baths

3. Discuss sleep.

    a) describe how sleep needs vary from child to child
    b) state conditions favorable to sleep
    c) state conditions unfavorable to sleep

4. Discuss proper clothing.

   a) state why clothes should be comfortable
   b) state why fasteners should be simple and easy to manipulate
   c) state why clothing should be suitable to situations (playtime, for church, etc.)
   d) assist young child in learning to dress

V. Play

1. Discuss why children need to play.

   a) happiness
   b) learning how to use and develop muscles
   c) controlling frustrations
   d) outlet for excess energy
   e) developing feelings of accomplishment
   f) practicing social skills (sharing with others)
   g) promotes good appetite and healthful sleep
   h) practicing adult roles (dress-up, playing house, fireman)
   i) self-expression and imagination
   j) child learns what he is capable of doing (skills, abilities)
   k) learning what is expected to them
   l) exploration of the world in which they live
   m) learns to follow directions

2. Explain types of play.

   a) exploratory - feeling, tugging, squeezing toy
   b) dramatic - make believe, puppets
   c) amusing - listening to music, stories, looking at pictures, TV
   d) construction - blocks, tinkertoys, clay, sand puzzles

VI. Safety - Indoors and Outdoors

1. State precautions necessary for safety in the kitchen

   a) never leave child alone in the kitchen
   b) watch for flammables near stove, including grease
   c) keep child away from ovens, and all other electric appliances
   d) make knives, scissors, and sharp tools inaccessible
   e) make all poisonous substances inaccessible
   f) place pots with hot liquid on back of stove or table, handles turned in

   - g) place electric cords attached to appliances out of reach
   - h) when transporting baby hold closely and securely

2. Make stairs and halls safe for child.
   - a) well lighted
   - b) solid hand rails
   - c) anchor carpeting to stairs
   - d) keep stairs free of toys, shoes, other loose objects

3. Keep bedrooms safe for infants.
   - a) put toys away at night
   - b) keep screens and windows fastened
   - c) check to make certain paints are non-toxic

4. Keep adult bedrooms safe.
   - a) keep cosmetics in safe place
   - b) dispose of plastic cleaning bags

5. Keep bathrooms safe for infants.
   - a) put medicines, cosmetics, cleaning supplies, razors and razor blades out of reach or locked in containers
   - b) never leave child alone in tub or bathinette
   - c) equip tub with rubber mat
   - d) remove electric appliances from bathroom (such as portable heaters)

6. Keep living room or family room safe for babies.
   - a) see that screen is over fireplace
   - b) fix area rugs to prevent slides or falls
   - c) keep radiators covered or enclosed
   - d) cap unused electric outlets
   - e) beware of furniture with sharp corners

7. Keep matches and cigarette lighters away from children.

8. Empty all ash trays.

9. See that small objects are inaccessible.
   - a) buttons
   - b) coins
   - c) peanuts
   - d) marbles

10. Keep guns and ammunitions locked up.

11. Give children blunt tipped or plastic scissors for cutting.

12. Get rid of unused refrigerators or completely remove old doors.

13. Prevent toddler from carrying potentially dangerous objects, breakable glass cups.

14. Beware of spoons, bottles, sticks, or other objects, which child might put in mouth

VII. Discipline

1. Explain need for discipline.

2. Explain what discipline is and is not.

3. Explain positive disciplinary action.

    a) attend to child who is behaving appropriately
    b) use of praise for appropriate behavior
    c) use of rewards

4. Explain negative disciplinary action.

    a) nagging, yelling at, scolding inappropriate
    b) spanking, removal from activities as punishment
    c) denial of treats

5. Explain constructive use of discipline in some situations.

    a) aggressive action toward another child
    b) willingness to share
    c) playing with dangerous objects

VIII. Illnesses

1. Recognize the need for regular check-ups for infants and children.

2. List or describe inoculations and vaccinations.

    a) small pox
    b) diphtheria
    c) whooping cough
    d) tetanus
    e) measles
    f) german measles
    g) polio
    h) mumps

3. Recognize symptoms of illness.

   a) crying (as if in pain)
   b) fever
   c) vomiting
   d) diarrhea
   e) listlessness
   f) coughing
   g) rash
   h) breathing differently
   i) other

4. Discuss what action to take when symptoms of illness are apparent.

   a) contact parent
   b) contact doctor or hospital
   c) administer "at home" treatment while waiting for medical care

IX. Emergencies

1. List telephone numbers for:

   a) doctor
   b) hospital
   c) fire department
   d) police department
   e) ambulance
   f) taxi

2. Explain use of first aid kit and first aid booklet in caring for:

   a) burns
   b) electric shocks
   c) poisonous bites
   d) stings
   e) cuts
   f) scrapes
   g) punctures
   h) drowning
   i) fractures

3. List the contents of a good first aid kit.

BASIC HOUSE MAINTENANCE

The following material has been developed to help teachers convey skills and knowledge for basic home maintenance. Home maintenance calls for many different skills. However, this material should be used in a very practical manner, from the simplest job to most complex, depending on the students' levels of learning.

Resource Materials

Books

Audels sets

Modern Carpentry. Goodheart - Willcox

Power Tools, etc. Delmar Publishers

Building Materials & Methods Technology
Research Office, 1730 Rhode Island Avenue, N.W., Washington, D.C. 20036

Building Maintenance. Audels.

Complete Do It Yourself Manual. Readers Digest.

Film & Audio Visual

National Forest Products Association,
Technical Service Division
1619 Mass Avenue, N.W. Washington, D.C. 20036

Free Film Library, University of Vermont
Minn Mining Company

Sterling Educational Films:

Paperhanging: Application. 14 minutes.
Paperhanging: Preparation. 14 minutes.
Plumbing: Joints. 14 minutes
Plumbing: Traps and Vents. 14 minutes.

Source Directory

National Association of Plumbing, Heating, and Cooling Contractors, 1016 20th Street N.W., Washington, D.C. 20036.

National Concrete Masonry Association, 1015 Wisconsin Avenue N.W. Washington, D.C. 20007

National Safety Council, 425 N. Michigan Avenue, Chicago,
Illinois 60611

Paxton-Patterson Equipment & Supply, 45 Samworth Road,
Clifton, New Jersey 07012

Portland Cement Association, 33 W. Grand Avenue, Chicago,
Illinois 60076

Sears, Roebuck & Company, Publications Department, 425 Homan
Avenue, Chicago, Illinois 60607

Stanley Tools Division, The Stanley Works, 600 Myrtle Street,
New Britain, Connecticut 06050

Sterling Educational Films, 241 E. 34th Street, New York,
New York 10016

Theodore Audel & Company, Division of H. W. Sams & Company, Inc.
4300 W. 42nd Street, Indianapolis, Indiana 46206

American Institute of Maintenance, 710 West Wilson Avenue,
P.O. Box 2068, Glendale, California 91209

American Plywood Association, 1119 A Street, Tacoma, Washington
98401

Cornell University Film Library, Ithaca, New York 14850

Delmar Publishers Division, Litton Educational Publications, Inc.
P.O. Box 5087, Mountainview Avenue, Albany, New York 12205

Goodheart-Wilcox Company, Inc., 123 W. Taft Drive, South Holland,
Illinois 60473

Jam Handy Organization, 2781 E. Grand Boulevard, Detroit,
Michigan 48211

McCormick-Mathers Publishing Company, Inc., Subsidiary of
Litton Educational Publishing, Inc., New York, New York 10001

BASIC HOUSE MAINTENANCE

After completing prescribed learning activities, the student will be able to complete a minimum of five home repair projects such as removing paint, repairing plaster, replacing a tile, replacing a screen and so forth. The projects will be evaluated by the course instructor with criteria obtained from various manuals and experienced home repairs specialists.

I. Apply Exterior Finishes.

1. Identify, select, and discriminate between:

   a) types of brushes (and bristles)
   b) solvents
   c) wire brushes
   d) scrapers
   e) ladders
   f) rags
   g) paints
   h) sprayers
   i) rollers
   j) mixing paddles
   k) painter's coveralls
   l) painter's cap
   m) masking materials
   n) drop cloth
   o) abrasives

2. Prepare surface for painting.

   a) remove loose weathered paint if necessary
   b) clean surface
   c) prime new surfaces
   d) mask if necessary
   e) place drop cloth appropriately

3. Prepare paint for application.

   a) skim or strain if necessary

4. Apply paint.

   a) apply emulsions
   b) apply oil bases
   c) apply to horizontal siding
   d) apply to narrow wood trim
   e) apply to large flat surfaces and to irregular surfaces such as raised panels
   f) apply to metal
   g) apply to vertical siding
   h) apply to overhead surfaces

II. Apply Interior Finishes

1. Prepare area for painting.

   a) remove worn or blistered paint
   b) clean surface

- c) sand rough spots
- d) remove all furnishings possible
- e) remove switch plates, receptacles, plates, etc.
- f) mask areas not to be painted
- g) place drop cloths appropriately

2. Prepare paint for application.

- a) skim or strain paint if necessary
- b) stir if necessary
- c) mix, if necessary

3. Apply paint.

- a) temperature should be between 60-70 degrees Farenheit
- b) dip brush in paint
- c) rinse brush or roller from time to time while painting with latex
- d) wipe up spilled paint immediately
- e) paint ceiling before walls
- f) refrain from painting too wide a strip
- g) lap next strip into previous one
- h) cut in junction of ceiling and wall, or wall and wall before painting next surface at right angles to it
- i) paint woodwork, doors, windows, trim, etc., last
- j) apply different types of paint
- k) emulsion
- l) oil base
- m) stains
- n) sealers

4. Apply paint to various locations.

- a) ceiling
- b) wall
- c) trim
- d) doors
- e) windows

5. Clean up.

- a) clean latex applicators with soap and water and rinse clear
- b) clean oil paint applicator with turpentine or thinner until paint has loosened; work bristles against bottom of container to release paint; squeeze bristles between thumb and forefinger to work paint out of center of bristles; rinse clean in solvent; wash in soap and water; rinse clean

        c) comb bristles to straighten them
        d) wrap brush in heavy paper
        e) hang brush bristles down or store flat
        f) avoid standing brush on bristles

6. Demonstrate safe procedure.

    a) avoid painting in closed room
    b) avoid prolonged exposure to paint fumes
    c) use sturdy ladders
    d) position ladder correctly
    e) climb ladder safely
    f) avoid overreaching when painting from ladder
    g) dispose of used rags in covered metal container
    h) store paint in well-ventilated place

III. Wallpapering.

1. Identify, select, and use

    a) straight edge
    b) cutter
    c) yard stick
    d) smoothing brush
    e) edge roller
    f) papering board
    g) paste bucket
    h) level
    i) scissors

2. Determine starting point.

3. Measure width of trimmed sheet of paper.

4. Measure out from wall width of paper minus 1/4".

5. Mark wall behind straight edge.

6. Measure width of wallpaper.

7. Mark second vertical line the distance 1/2 the width to right of first vertical line.

8. Check that there is enough paper to cover full area to be papered.

9. Check that all paper is the same pattern number.

10. Check that paper is of same lot of mill run.

11. Check whether pattern is straight type or drop type.

12. Determine match of paper.
13. Determine height of wall plus 4" for trim.
14. Cut one roll of paper through one match.
15. Cut second roll through opposite match if drop pattern.
16. Uncurl and unroll required length of paper.
17. Place yard stick across paper.
18. Tear or cut off length required.
19. Continue cutting until both rolls cut.
20. Uncurl paper with yard stick.
21. Turn paper over.
22. Push all sheets 10" from edge of pasting table.
23. Pull top sheet of paper toward front.
24. Spread paste down middle of sheet.
25. Spread paste from center to edges.
26. Pull sheet of paper along the table until bottom is on table.
27. Fold bottom end to the center.
28. Paste bottom section.
29. Lift strip of paper and place it over arm.
30. Climb step ladder.
31. Hold right corners between first fingers and thumb of right hand.
32. Put foot out to break unfold.
33. Line paper up to plumb line.
34. Run paper layer down middle of paper.
35. Remove all air bubbles and wrinkles.

36. Raise paper and smooth down.

37. Tap or roll edges of paper.

38. Match pattern of next sheet carefully.

39. Measure from last sheet to wall.

40. Cut required width from pasted sheet.

41. Cut paper so that strips go around corner 1/4".

42. Keep edge level at all times. Walls should be prepared and sized depending on material to be used.

IV. Repair Damaged Plaster.

1. Identify, select and use:

    a) putty knife
    b) trowel
    c) sandpapers
    d) plaster and spackling compound
    e) lath
    f) screwdriver
    g) sponge
    h) paintbrush

2. Prepare hole for re-plastering: make sure all cracked or damaged plaster around edges of hole is removed.

3. Clean out old plaster which is on, in and behind lath.

4. Apply first layer of plaster to lath.

    a) dampen surface area to be patched with sponge
    b) force plaster through lath so that it forms keys behind lath.
    c) apply one-half plaster to no more than half depth of hole
    d) before plaster dries, score with screwdriver or nail
    e) allow to dry for four hours.

5. Apply finish coat.

    a) re-dampen plaster with moist sponge again
    b) apply spackling compound or plaster flush with existing wall.

6. Match texture of existing wall.

    a) for stipple--jab paint brush lightly and repeatedly into moist plaster
    b) for swirl--swirl paint brush around surface of moist plaster
    c) for smooth--wet sponge (in one hand) and float trowel (in other hand) simultaneously across face of fresh plaster
    d) seal with shellac or recommended sealer before repainting or repapering

7. Repair damaged gypsum board, sheetrock.

    a) identify, select and use:
        1) paint brush
        2) steel
        3) hack saw blade (fine tooth)
        4) sandpaper (fine)
        5) knife
        6) pencil
        7) perla--taper--plaster

8. Prepare plug

    a) determine size of plug needed to fully cover damaged area
    b) cut plug to gross size (if you estimate needing a 6" square plug, cut gross size to 7").
    c) measure, mark, and cut finish plug from back side, peeling away plaster so that it leaves extra margin of front paper an inch or so larger than plug

9. Prepare wall for plugging

    a) place backside of plug over damaged area
    b) press down firmly and scribe back side dimension onto wall with pencil (never use ink pen on sheetrock, etc.)
    c) cut out area to be plugged with sharp knife or hacksaw blade, being careful to cut on inside of scribed lines.
    d) remove damaged area
    e) dry fit plug
    f) sand to fit snugly, if necessary

10. Install plug.

    a) apply spackle around opening, cover edges of opening, and plug
    b) insert plug

  - c) squeeze excess spackle from under surface paper with hand
  - d) apply spackle to complete area, with paint brush
  - e) feather seams with paint brush
  - f) allow to dry
  - g) sand paper smoothly

V. Replace Ceramic Tile.

1. Identify, select, and use:

  - a) claro hammer
  - b) steel straightedge
  - c) glass cutter
  - d) chipping hammer
  - e) screw driver
  - f) putty knife
  - g) serrated spreader
  - h) nail punch
  - i) squeegee
  - j) sponge
  - k) cloth
  - l) rubber gloves
  - m) grout
  - n) adhesive
  - o) primer
  - p) scrapwood

2. Remove damaged tile.

  - a) punch deeply a hole in center of damaged tile, with hammer and nailpunch
  - b) score all around tile (in grout) with glass cutter
  - c) chip around hole punched in center of tile using chipping hammer
  - d) pry rest of pieces loose with screwdriver inserted into hole enlarged with chipping hammer OR
  - e) continue using chipping hammer until all of tile is removed
  - f) remove all adhesive and grout with proper solvents or by scraping or both
  - g) resurface wall board with patching plaster to bring back to depth level with other tiles
  - h) reprime with recommended primer and allow to dry
  - i) apply proper adhesive, as label directs, using serrated spreader
  - j) place tile in center of prepared opening, allowing even space for grout all the way around
  - k) tap in place, using hammer and flat piece of scrap wood

l) remove any oozing of bonding agent around edger
m) wait 24 hours before grouting
n) mix grout according to manufacturer's instructions
o) smooth seams with finger
p) allow to dry one half hour
q) wash tiles clean with damp rag or sponge
r) polish with dry cloth
s) allow to set for 24 hours

3. Replace a floor tile.

a) identify, select, and use as instructed:
    1) linoleum knife (or sheetrock knife)
    2) replacement tile
    3) adhesive (as recommended for type of tile used)
    4) heating device (propane torch, flat iron, etc.)
    5) roller or rolling pin
    6) serrated spreader
    7) putty knife (stiff, wide bladed)
    8) rag
    9) solvent

4. Remove damaged tile

a) cut completely through damaged tile in a straight line about one inch from any edge
b) insert putty knife into scored line and pry out small strip, if possible, OR
c) apply heat (asphalt tile only) and pry, OR
d) apply solvent (cork, rubber, linoleum tiles) and pry.
e) remove all old adhesive from floor with cloth and solvent (which has been recommended for a specific adhesive), taking pains at all times to avoid contact with surrounding tiles and skin
f) apply proper adhesive with serrated spreader, avoiding use of too much adhesive
g) set one corner of replacement tile into corner of opening
h) pivot tile, on one corner, if necessary, and set one edge into place
i) set rest of tile down (never slide tile) and press firmly into place
j) roll tile down, if necessary, with rolling pin (avoid rolling asphalt or vinyl-asbestos tile)
k) allow to dry in place overnight

VI. Repairing Windows

1. Cut glass to size.

    a) identify, select and use with instruction:
        1) glass cutters
        2) pliers (parallel jawed preferred)
        3) kerosene
        4) newspaper
        5) leather gloves
        6) rule
        7) various types of glass
        8) steel straightedge
        9) grease pencil
    b) determine size of glass
    c) place glass on several layers of newspaper on flat surface
    d) measure glass to size, marking at top and bottom of line to be cut with a finely sharpened grease pencil
    e) dip glass cutter in kerosene
    f) using steel straightedge as guide, scribe line on glass with hard pressure, once (and once only) using glass cutter
    g) move glass so that scored line is along edge of surface with waste over edge
    h) apply parallel jawed pliers at one end of waste and apply slight downward pressure, working along toward opposite end of waste until waste drops away from scored line
    i) dispose of waste

2. Replace glass in window sash.

    a) identify, select, or give an example of:
        1) various types of glass
        2) glazing compounds
        3) glazier's points
        4) linseed oil
        5) paint
        6) glass cutter
        7) wood chisel
        8) putty knife
        9) pliers
        10) rule
        11) grease pencil
        12) steel straightedge
        13) paint brush (sash) J
        14) screwdriver
        15) claw hammer
    b) use gloves and safety glasses for removing glass

c) remove broken glass safely, with pliers
d) remove old putty and glazier's points and avoid damage to the wood portion of sash
e) remove glazier's points with chisel
f) clean all putty out of rabbeted edges with chisel or screwdriver
g) prime rabbeted edge with linseed oil
h) measure glass to size of opening
i) cut glass to size
j) prepare glazing compound according to directions on label of can
k) roll putty to form bead
l) lay bead in rabbeted edge
m) spread putty bead with putty knife
n) place glass in bed of putty carefully
o) press glass firmly into bed of putty
p) place glazier's points at 8" intervals around glass, pressing them in with tip of screwdriver
q) roll putty to form bead
r) lay bead around edge of glass and form to beveled edge with putty knife
s) remove excess putty from glass
t) allow putty to dry according to directions on can
u) paint new putty with sash brush

VII. Plumbing

1. Identify and discriminate between types of, and use:

a) pipe wrenches
b) vice grip wrench
c) tube cutter
d) pipe cutter
e) tee reamer
f) monkey wrench
g) adjustable wrench
h) pipe threader
i) flare tool
j) strap wrench
k) hack saw
l) vice
m) propane torch
n) solder
o) wire brush
p) emery cloth strips
q) flux
r) pipe dope
s) pipe tape (teflon)
t) plastic pipe solvent cement
u) snake
v) plumber's helper

2. Identify and select:

a) gaskets
b) tees
c) elbows
d) plastic pipe
e) iron pipe
f) copper pipe
g) couplings
h) clamps
i) straps
j) nipples

k) flange
l) union
m) bushing
n) grease traps
o) slip nut
p) clean-out plug
q) washers
r) toilet tank assembly
s) faucet assembly
t) drain assembly
u) different types of pipe (plaster, copper, steel, cast iron)

3. Demonstrate function of:

    a) toilet tank assembly
    b) drain assembly
    c) faucet assembly
    d) pressure tank assembly
    e) hot water heater assembly
    f) pump assembly
    g) septic field assembly
    h) hose assembly
    i) dish washer assembly
    j) clothes washer assembly

4. Fix leaky faucet.

    a) trace leak and locate faulty area
    b) turn off toilet shut-off valve
    c) drain faucet
    d) remove handle screw, handle, cap nut (use tape around before applying wrench), cone bonnet packing, bib washer, spindle (with fingers), faucet washer, valve, spout, faucet washer and slip nut
    e) find faulty part
    f) repair or replace faulty part
    g) reassemble (reverse of item No. d)
    h) turn on shut-off valve
    i) check that leak is stopped

5. Fix leaky drain

    a) place large pan under drain
    b) trace leak and locate faulty area if leak is in trap
    c) tape hex slip nuts
    d) remove hex slip nuts from both ends of U-trap with monkey wrench and dowel, ease washers away from joint; and pull U-trap down
    e) locate defective part (nut or washer)
    f) repair or replace and reassemble
    g) run water through to check for leaks or if leak in sink tail piece assembly

  - h) remove lock nut and washer
  - i) locate defective part
  - j) repair or replace and reassemble
  - k) check

6. Fix clogged trap

  - a) follow steps A) to d) under item 5.
  - b) remove clogging material with snake or chemicals
  - c) reassemble and check

7. Troubleshoot float and ballcock assemblies.

  - a) inspect float for evidence of water
  - b) replace, if necessary
  - c) check float arm adjustment (ball too low in water to shut off valve)
  - d) lengthen arm if necessary OR
  - e) turn off water at nearest shut-off valve AND
  - f) drain and dry tank by flushing and sponging
  - g) unclip fill tube from overflow tube
  - h) unscrew float ball arm from ballcock (and save both pieces if they are sound)
  - i) loosen coupling nut and remove lock nut and washer from underside of tank
  - j) lift out ballcock assembly
  - k) select new unit of correct size and type
  - l) replace defective unit with new unit by completing steps f) to j) (item 7) in reverse order
  - m) turn on water and check

8. Fix clogged sink drain.

  - a) remove trap
  - b) apply clean-out auger until obstruction is either broken up or hooked and pulled out
  - c) replace trap and check

9. Fix clogged toilet drain.

  - a) apply rubber plunger OR
  - b) apply clean-out auger until water moves out of bowl freely

10. Fix clogged tub drain trap

  - a) remove water from tub or block drain outlet
  - b) locate access to drum trap
  - c) place pay or pucket under trap
  - d) remove drain trap plug

- e) observe if water flows into trap, which indicates blockage is located between trap and stack pipe
- f) clean out drain trap
- g) apply auger to pipe leading out of drain trap to stack
- h) replace drain plug gasket if it is damaged when removed
- i) apply hardening pipe compound to both surfaces of new gasket
- j) clean both surfaces against which gasket seats
- k) reseat gasket
- l) apply non-hardening pipe compound to plug threads
- m) reassemble and check

11. Assemble plastic pipe.

    - a) measure rough distance between fittings
    - b) allow correct additional length for insertion into fittings
    - c) cut pipe to size as square as possible using fine tooth hack saw
    - d) remove burs from sawed ends with emery cloth
    - e) dry fit all connections before applying solvent-type glue
    - f) glue one joint at a time, applying solvent-type glue to both surfaces to be joined
    - g) force surfaces together and align quickly (before glue sets)
    - h) work in well ventilated area; if it is not possible to work in ventilated area, take frequent breaks in fresh air
    - i) run water through for check against leaky fittings

12. Assemble copper pipe.

    - a) measure rough distance between fittings
    - b) allow correct additional length for insertion into fittings
    - c) cut pipe to size, with tube cutter, being careful to snug down on tubing cutter each turn around the pipe (but not so much that it deforms pipe)
    - d) remove burs and oxides from inner and outer pipe surfaces with emery cloth and wire reaming brush
    - e) dry fit all connections before soldering
    - f) solder one joint at a time only
    - g) apply light coat of flux to both surfaces
    - h) slip fitting on tube and twist back and forth to distribute flux evenly
    - i) heat both surfaces to be joined by applying propane torch flame to fitting only (not to pipe)

j) hold tip of spool rolled solder against rim of heated fitting until it melts and flows into joint. Avoid contact between solder and flame
k) use sample solder to be sure it flows all around pipe and forms a shiny seal
l) allow to cool

VIII. Repair single roofing shingle

1. Identify, select, and use:

a) hammer
b) roofing bar
c) knife or metal shears
d) roofing nails
e) roofing cement (asphalt)
f) shingles

2. Remove old or damaged shingle completely.

3. Replace with identical shaped shingle.

4. Position in to same place.

5. Hammer in nails so that no nail heads are exposed.

IX. Replace damaged screening

1. Identify, select and use with instructions:

a) brads (twice length of molding thickness)
b) 16 gauge screening
c) 1/4" staples
d) staple gun
e) claw hammer
f) tin snips
g) rule
h) counter sink
i) screw driver
j) wood filler
k) sandpaper
l) chalk line
m) wood chisel
n) pliers
o) knife

2. Remove screen molding carefully with old wide wood chisel; then remove brads from molding.

3. Remove damaged screening by prying out staples with screwdriver and pliers.

4. Measure rough dimensions of opening.

5. Measure and mark screen to size with rule and chalk line.

6. Cut screening along chalked line with tin snips.

7. Lay screen in rabbet.
8. Check fit before fastening.
9. Staple one corner.
10. Pull screen tight and staple opposite corner.
11. Proceed similarly to staple other two corners.
12. Staple every three inches all around.
13. Make sure staples are down flat against screen.
14. Put molding in place.
15. Secure molding with brads.
16. Set brads.
17. Fill countersunk marks with wood filler.
18. Allow wood filler to dry.
19. Sand wood filler smooth.

X. Using Ladders

1. Ladder safety.

    a) avoid standing on the top step of a stepladder
    b) avoid placing paint on a weak paint holder on a stepladder
    c) avoid dropping boards or planks on the rungs of any ladder
    d) avoid extending your ladder to its greatest possible length
    e) avoid climbing a ladder that is too straight (A rule of thumb is one foot out for every four feet the ladder extends upward)
    f) avoid climbing a ladder that is tilted sideways
    g) avoid catching fingers in the attaching guides (braces)
    h) avoid erecting ladder in an area where the top will hit power or telephone lines
    i) avoid stepping up and reaching up with hand at the same time
    j) check ladders used for broken and cracked rungs and siderails

- k) check the rope on an extension ladder to see that it is not rotten
- l) place all legs of a ladder on level ground (use leveling wedges where necessary)
- m) use only a wooden or fiberglass ladder when painting near electrical wiring
- n) check the catches on an extension ladder. Be sure that both are operating properly or don't use the ladder
- o) select appropriate ladders for the jbo

2. Erect a stepladder.

   - a) explain where stepladder can be erected safely
   - b) make sure all four legs of stepladder meet the floor
   - c) make sure the device that locks stepladder legs apart is tightly jointed

3. Erect an extension ladder.

   - a) select place to erect extension ladder
   - b) check for low hanging power or telephone wires
   - c) untie rope
   - d) erect ladder
   - e) gently pull rope extending ladder
   - f) check ladder to make sure it has not been extended too far
     - 1) at 20' long leave at least three rungs doubled
     - 2) at 30' long leave at least four rungs doubled
     - 3) at 40' long leave at least five rungs doubled
   - g) check ladder to see if it leans
     - 1) if leans left, place wedge under left side rail
     - 2) if leans right, place wedge under right side rail
   - h) mount and climb ladder safely

XI. Masonry.

1. Identify materials:

   - a) masonry sand
   - b) cement
   - c) hydrated lime
   - d) water
   - e) cement blocks
   - f) joints
   - g) trig line fastener

2. Identify tools for mixing mortar

   a) hoe
   b) shovel
   c) trowel
   d) mortar pan
   e) wheel barrow
   f) cement mixer
   g) water

3. Identify hand tool used for block laying

   a) masonry hammer
   b) masonry chisel
   c) long joints
   d) short joints
   e) rule
      24" level
      48" level
   f) chalk line

4. Obtain materials to mix mortar.

   a) sand
   b) water
   c) hydrated lime
   d) cement

5. Locate materials next to the working area.

6. Mix mortar to proper consistency--soft but not sloppy, firm but not stiff.

7. Temper mortar on board.

8. Test mortar with trowel for softness and plasticity.

9. Maintain plasticity by tempering with water.

10. Laying the block.

    a) lay out the corners
    b) lay out the bond (block slots)
    c) spread a full mortar bed for the first course of block
    d) apply mortar to block end
    e) place block in position with bond line

  - f) place remaining blocks
  - g) plumb and straighten the blocks
  - h) level and straighten the blocks

11. Patch and point.
    - a) observe and identify cracks in joints
    - b) obtain additional mortar
    - c) place mortar on trowel
    - d) stick mortar on broken joint
    - e) force mortar into joint with point of trowel

12. Tool
    - a) tool exterior joints with jointer

13. Clean and secure work area.
    - a) wash all tools in water
    - b) secure materials.

SMALL ANIMAL CARE

There is much to be learned from caring for living things. Caring for small animals not only can be fun, it can teach the student how to accept responsibility. Unfortunately, many families with pets subject them to needless torture. This sometimes results from ignorance and sometimes from willful negligence.

Many students become enchanted by kittens or puppies and insist on having one for their own. After a few days, they find out that such pets must be cared for more diligently than their inanimate toys. At this point they must learn some facts-of-life since all privileges have their price. It is hoped that this lesson will be learned before the student enters into parenthood and is confronted with the ultimate care--a baby girl or boy.

SMALL ANIMAL CARE

Terminal Performance Objective:

After completing prescribed learning activities, the student will be able to list basic pet care procedures for a dog, cat, or bird. The list will be evaluated for content and completeness by the course instructor or other designated individual.

I. Cats

1. Discuss points to consider before selecting a cat.
   - a) adaptable to size of one's home
   - b) young cats are more easily trained than older
   - c) consider cost required to keep cat
   - d) consider time required to keep cat
   - e) longhaired cats require more brushing and grooming.
2. Discuss where to get a cat.
   - a) breeders
   - b) dealers
   - c) pet shops
   - d) private owner
   - e) humane society
   - f) newspaper
3. Take cat to veterinarian as soon as possible.
   - a) check cat's present health
   - b) check vaccinations
   - c) check diet
   - d) describe symptoms of illness
   - e) discuss special care
4. Take cat to animal shelter or find another home for him if compelled to get rid of cat(s).
5. Explain reason for never turning cat loose.
   - a) cat will suffer

6. Keep cat confined at night.

7. Describe special instructions for cat care.

    a) check cat's collar to make sure it fits snugly
    b) avoid dropping a cat as he does not always land on his feet.

8. Explain the advantages of castrating male cats.

    a) wanderers
    b) offensive odors

9. Explain advantages of spaying female cats.

    a) over-population of kittens means suffering and starvation for unwanted cats
    b) kittens mean extra care

10. Care for a pregnant cat (63 days).

    a) allow cat to have daily exercise
    b) increase amount of food and milk
    c) prepare box for cat
    d) line with shredded paper or bedding material
    e) place in warm, semi-dark spot
    f) call vet if cat is in labor for 3 hours with no results

11. Care for new mother and kittens.

    a) feed mother three times a day
    b) increase light when kittens' eyes open
    c) offer kittens a little milk two or three times a day when 3 or 4 weeks old.

12. Explain that cat will wean kittens within 6 to 8 weeks.

13. Describe an abyssinian cat.

    a) originated from Egypt
    b) short coat
    c) light brown with black or grey markings
    d) long hairs on ends of large ears
    e) end of tail is black
    f) playful cats

14. Describe a domestic short hair.

    a) ordinary house cat
    b) described as tabby, tiger, and tortoise shell
    c) white, black, gray, yellow or combination
    d) striped
    e) excellent pets

15. Describe a Manx cat.

    a) short thick coat
    b) almost any color
    c) long rear legs
    d) short front legs
    e) stub of a tail
    f) affectionate pets
    g) imported from the Isle of Man

16. Describe a Persian cat.

    a) larger than most breeds
    b) less active
    c) quiet companions
    d) long, thick coats
    e) white, black, tan, or other color

17. Describe a Siamese cat.

    a) friendly
    b) lively
    c) originated in Thailand (Siam)
    d) short coat
    e) light grey with markings of a darker color on face, ears, feet, and tail
    f) kitten born white
    g) darker as they grow older

18. Prepare a bed for a cat.

    a) use a box or basket
    b) buy a commercial one
    c) put in a quiet spot
    d) line with blanket, cushion, discarded clothing
    e) wash bedding often

19. Explain how to feed a cat.

    a) buy commercially prepared cat food to insure balanced diet

b) avoid giving cat small bones such as poultry or pork
c) wash cat's bowl after each feeding
d) keep fresh water available at all times
e) use different bowl for water and for food

20. Explain how to feed kittens.

a) feed kittens four times a day until they are about six months old
b) increase amount of food gradually each day
c) decrease number of feedings to twice daily at 8 or 9 months

21. Discuss the bathing of a cat.

a) cats normally should not be bathed
b) cats should be bathed in warm, soapy water if exceptionally dirty
c) massage cat's skin thoroughly with a cloth or fingers
d) keep water out of cats eyes and ears
e) rinse him in warm water
f) dry cat thoroughly with towel
g) keep cat indoors until completely dry
h) avoid using any cat cleaning preparations that contain creosote products

22. Brush cat.

a) brush cat often
b) brush long haired cats more frequently
c) pull knots in fur apart with comb
d) clip knots out if combing fails to remove them

23. Explain how to train a cat.

a) find shallow pan or box big enough for full grown cat to get into
b) cover bottom with sand, sawdust, or commercial cat litter
c) keep pan in same place at all times
d) watch cat carefully
e) put him in his pan if he seems to be wandering around from place to place
f) change litter often
g) wash pan with soap and water every few days

24. Prevent cat from destroying furniture with claws.

    a) provide him with a scratching post
    b) cover log with canvas or piece of old rug
    c) show cat post when he tries to scratch furniture
    d) try putting catnip on post if all else fails
    e) de-claw a cat only if he is to always remain inside

25. Provide cat with a toy.

26. Explain cat's response to discipline.

    a) most refuse it
    b) cats learn their name
    c) cats are independent and will learn tricks only when in the mood

II. Dogs

1. Identify three common breeds of dogs.

    a) poodles
    b) German shepherds
    c) collies
    d) cocker spaniels
    e) sheepdogs
    f) boxers
    g) St. Bernards
    h) beagles
    i) labradors

2. Identify two main classes of dogs.

    a) sporting
    b) hound
    c) working
    d) terriers
    e) toy dogs
    f) non-sporting dogs

3. Identify major parts of dog.

    a) muzzle
    b) elbow
    c) shoulder
    d) tail

4. Explain some of the responsibilities of a dog owner.

    a) learning to care for a living animal
    b) training the dog
    c) licensing the dog
    d) love and affection

5. Explain factors to consider before getting a dog.

    a) discuss where the dog will be kept
        1) house
        2) back yard
        3) garage
        4) farm building
        5) other
    b) discuss what kind to get
        1) consider size
        2) consider how much space you have
    c) explain what kind of a shelter a dog should have if he is kept outside
        1) off the ground
        2) not too big
        3) overhang at the door to keep the bedding dry
        4) sloping roof

6. Explain some tips for the first day one gets his dog.

    a) bring dog home in the morning
    b) don't tie him outside
    c) show him his toilet spot
    d) register him

7. Explain how to housebreak a dog.

    a) train all puppies to relieve themselves outside, not on paper (with the possible exception of toy breeds)
    b) start training it immediately
    c) take puppy to one particular spot outside
    d) clean scrupulously any area inside if dog makes a mistake--any odor often encourages a dog to return to same spot

8. Discuss how much to feed a dog.

    a) feed 1/2 oz. of dry food per pound of dog a day
    b) feed adult only amount that will be cleaned up in 30 minutes

  - c) feed grown dog one meal a day
  - d) avoid feeding dog table scraps
  - e) avoid feeding dog baby food or eggs
  - f) rely on veterinarian for advice on feeding sick dog

9. Discuss feeding puppies.
   - a) keep food available at all times until puppies are 16-20 weeks
   - b) feed once a day at 20 weeks
   - c) feed sick puppies often

10. Explain how to feed pregnant dog.
    - a) increase food supply slightly
    - b) feed only nutritionally complete dog food and water
    - c) supplement food supply temporarily after birth of large litter

11. Describe the weaning of puppies.
    - a) wean at 6 weeks
    - b) cut down rations the first few days to reduce the mother's milk supply

12. Take dog to veterinarian when dog is sick.

13. Recognize symptoms of illness.
    - a) loss of appetite
    - b) lower eyelid may hang, showing red membrane
    - c) harsh feel to coat (dead texture)
    - d) mucus in stools or traces of blood
    - e) potbelly with skinniness elsewhere
    - f) lack of interest
    - g) hiding in dark place
    - h) discharge from nose or eyes

14. Explain the necessity of vaccination and the appropriate time to administer.

15. Explain the various types of dog diseases and their vaccinations.
    - a) distemper
    - b) hepatitis
    - c) leptosperosis
    - d) rabies
    - e) worms

16. Describe various external parasites which afflict a dog.
    - a) fleas
    - b) ticks
    - c) mites
    - d) lice
    - e) other

17. Discuss treatment of external parasites.
    - a) sprays
    - b) powders
    - c) soaps
    - d) shampoos
    - e) liquids

18. Keep all persons away from dog.

19. Give prescribed medicines to dog.

20. Give dog a bath when he needs it.
    - a) select appropriate soap or shampoo
    - b) dry him with towel or hair dryer
    - c) avoid letting dog outside while wet

21. Take proper care of dog's coat.
    - a) comb
    - b) bush
    - c) remove hair when dogs are shedding
    - d) cut out hair mats with scissors

22. Groom dog on steady table or workbench.

23. Avoid interference with ear channel.

24. Discuss methods which prevent dog from getting into garbage pails.

25. Discuss methods of keeping dogs off furniture.

26. Train puppy when very young not to climb on people.

27. Give puppy appropriate objects to chew to prevent destruction of household objects.

28. Prevent dog from chasing cars.

29. Prevent dog from excessive barking and disturbing the neighborhood.

III. Birds

1. List four common varieties of domesticated birds.
    - a) canaries
    - b) finches
    - c) parakeets
    - d) parrots

2. Name some factors that make birds good house pets.
    - a) adaptable
    - b) clean
    - c) easy to care for
    - d) cost little to keep

3. Avoid trying to tame wild birds as they rarely become tame enough to domesticate.

4. Keep houses, baths, and feeders out of reach of cats.

5. Describe physical characteristics of the canary.
    - a) small
    - b) yellow

6. Select a healthy canary, free of injuries.

7. Select a singing canary.
    - a) male bird
    - b) trained canaries cost more than others

8. Teach canary to sing (by imitation).

9. Describe equipment needed for care of bird.
    - a) cage
    - b) perches
    - c) bird bath
    - d) containers for food and water

10. Take care of cage.
    - a) hang cage at eye level, away from drafts
    - b) cover cage with cloth at night

- c) clean perches and floor of cage at least once a week
- d) cover floor with paper
- e) clean perches with metal scraper

11. Take care of bird.

    - a) keep food and fresh drinking water available at all times
    - b) check food daily to make sure container holds seeds, not just husks
    - c) change water every day
    - d) clean food and water containers twice a week at least.

12. Explain how birds "chew"

    - a) eat gravel to grind food into digestible particles
    - b) keep gravel in cage at all times, in separate container from food, or on cage floor

13. Discuss bathing habits of the canaries

    - a) needs water for bathing once a day in summer
    - b) needs water for bathing two or three times a week in winter
    - c) empty and clean bird bath after each use.

14. Care for canary during moulting.

    - a) birds moult once a year in July or August
    - b) birds may be less active during moulting
    - c) avoid disturbing bird during this period

15. Discuss how to mate canaries.

    - a) obtain information from pet shop
    - b) ask veterinarian

16. Discuss health of canary.

    - a) prevent most diseases and parasites by keeping cage clean
    - b) canaries can get colds, pneumonia, lice, mites, and other

17. Recognize symptoms of illness which requires a veterinarian's attention.

    a) listlessness
    b) loss of appetite
    c) sets with head under wing

18. Describe a finch.

    a) active
    b) small
    c) brightly colored
    d) song bird

19. Explain how to care for a finch.

    a) examine bars on cage to make certain bird cannot fit through
    b) keep several in one cage if possible as finches are sociable birds

20. Discuss how to care for a finch.

    a) follow instructions for care of canaries.

21. Describe a parakeet.

    a) green, blue, yellow, or white feathers
    b) very popular pets

22. Tame a parakeet.

    a) speak softly
    b) move hand slowly into cage
    c) try this until parakeet will sit on owner's finger inside cage
    d) teach parakeet to sit on finger outside cage

23. Teach parakeet to talk.

    a) repeat one word over and over
    b) continue for 10-15 minutes
    c) put bird back in cage
    d) repeat lesson several times a day

24. Care for parakeet.

    a) refer to instructions for care of canaries.

LAUNDERING

Students need to understand that cleanliness is a basic human need. One common cleaning task is that of laundering. As a potential service occupation and as a frequent home task, students will engage in laundering tasks for the duration of their lives. Knowing the correct procedures and practices for laundering can make the process both easier and more efficient.

Motivational Activities

1. Stain Removal Activity

   Swatches of material are stained with a variety of common stains. Students identify and practice removing stains. A variety of stain removal products and methods can be used.

2. Sewing projects--Craft Activities

   a) make laundry bag
   b) clothespin bag
   c) shoe box or bag
   d) belt rack
   e) laundry product caddy

3. Do laundry for school sports, school departments and activity.

4. Construct a mending kit.

5. Do personal laundry in class.

6. Experiment with laundering:

   colored with white (red and white mixed)
   woolen--shrinkage using hot water
   how to set stains using improper temperatures

7. Visit a laundromat.

8. Visit rummage sale to get various garments that can be experimented with in the classroom.

LAUNDERING RESOURCES

PAMPHLETS

Source: Home Service Inst., Consumer Division, Calgon Corp., Pittsburgh, Penn. 15230.

The Laundry Book (free)

Source: Maytag Co., Newton, Iowa 50238.

The Bride's Guide to Home Laundry (free)

Source: Kendall, Helen W., Lear Siegler, Inc., Seymour Housewares Co., Seymour, Indiana 47274.

How to Take the Wrinkles Out of Ironing (free)

Source: Consumer Information, Public Documents Distribution Center, Pueblo, Colorado 81009.

Clothing Repairs 054 B (60¢)
Removing Stains from Fabrics 056 B (40¢)
Soaps and Detergents for Home Laundering 058 B (25¢)

Source: Extension Agent--for a list of county offices, contact the state office. A variety of materials is available from the Extension Service, Morrill Hall, Univ. of Vt., Burlington, Vt.

Lots about Laundering, The Clothes We Wear
Washday Wonders
Sanitation in Home Laundering
Pressing Is An Art
Soaps and Detergents for Home Laundering

Source: Joyce Champion, Manager Home Ec., U.S. Borax & Chemical Corp., P.O. Box 75128, Dept. B, Sanford Station, Los Angeles, Cal. 90005.

The Now Washbasket (25¢)

Source: Home Service Department, Best Foods, P.O. Box 2455, Grand Central Station, New York, N.Y. 10017.

The Starch Primer

Source: Consumer Service Dept., Best Foods, Division Corn Products Co., International Plaza, Englewood Cliffs, N.J. 07632.

The Sweater Primer

Source: Consumer Service Dept., Best Foods, A Division of CDC International Inc., International Plaza, Englewood Cliffs, N.H. 07632.

The Magic Rinse (Fabric Softener)

Source: Purex Corp, Ltd., Public Relations & Educational Service, 30 East 40th St., New York, 16, N.Y.

Out With Spots and Stains
Spot and Stain Core

Source: Lever Brothers Co., 390 Park Ave., New York, N.Y. 10022

Detergents and the Environment

Source: Tide, Proctor & Gamble, Dept. H-1, Box 296, Cincinnati, Ohio.

Teaching aids & teaching kits
Tide Washday Notes
Also booklet on laundering baby's clothes and removing stains

LAUNDERING

Terminal Performance Objective:

Given assorted soiled clothes, the student will be able to wash, dry, iron, and store them so that all items are clean, odorless, and wrinkle free.

I. Laundering Products.

1. Identify the four general classes of laundry products:
    a) all purpose soap
    b) light duty soap
    c) all purpose detergents
    d) light duty detergents
2. Choose the right soap or detergent for the clothes being laundered.
3. Select appropriate soap or detergent for type of water.
4. Measure and insert correct amount of soap or detergent for machine in use and type of laundry.
5. Identify the four classifications of bleaches:
    a) liquid chlorine bleach
    b) dry chlorine bleach
    c) dry oxygen bleach
    d) bleach substitutes
6. Explain the difference between chlorine bleaches and oxygen bleaches.
7. Use the correct bleach for selected fabrics.
8. Explain the function of bleach when laundering.
    a) cleans
    b) disinfects
    c) deodorizes
9. Prepare bleach for the machine.
10. Add the bleach at the correct time.
11. Add the correct amount of bleach.

12. List major advantages of using a fabric softener.

    a) fabrics softer
    b) easier to iron
    c) eliminate build up of static electicity

13. Use fabric softener in the final rinse only and without other laundry products.

14. Use correct amount of softener.

15. Explain when to use water softener and which type is best to use.

16. Identify two types of water softener.

    a) precipitating type
    b) non-precipitating type

17. Use correct amount of softener.

18. Identify and demonstrate correct use of spray starch and various types of starches.

II. Prepare to Wash.

1. Remove any nonwashable trimmings, ribbons, belts, buttons, etc.

2. Check all pockets for handkerchiefs or objects not to be washed.

3. Check and close all zippers and fasteners.

4. Turn permanent press garments inside out.

5. Check for, and mend any rips and tears so that further damage will not occur.

6. Pretest spots and stains.

III. Sort for Wash.

1. Sort all clothes according to kind of fabric and colorfastness.

2. Sort into groups as follows (each needs the same type of suds and water temperatures).

    a) white clothes of cotton, linen, orlon, dacron, or nylon. (White silk and wool should be washed separately)

b) light-colored garments, if colorfast, including nylon hosiery. Hosiery and delicate fabrics are often washed in a nylon-mesh bag to prevent snagging.

c) dark-colored garments, if colorfast. Any garment which is not definitely colorfast must be washed alone.

d) woolens, gloves, socks, scarves, and sweaters should all be washed separately by hand or by machine on special setting.

IV. Presoak

1. Remove all grease spots.
2. Apply extra detergent to stubborn spots, necklines, and cuffs.
3. Presoak necessary garments in detergent and water as needed.

V. Prepare to Remove Stains

1. Read all instructions attentively.
2. Check for toxic ingredients in stain remover.
3. Note all precuations recommended for removers that are flammable, give off poisonous vapors, or are poisonous if swallowed.
4. Read labels to determine what to do if swallowed accidentally or spilled onto body.
5. Explain procedures for using stain removers safely.
6. Store all solvents fafely.

VI. Remove Stains

1. Identify stains on fabric.
2. Determine whether stain is greasy or non-greasy.
3. Use a stain removal chart to determine steps to remove stains.
4. Test remover on hem or hidden area of fabric to determine its suitability for a prescribed fabric.

5. Follow directions for application of remover accurately.

6. Work patiently and carefully.

7. Return all materials to safe storage areas.

VII. Handwash

1. Distinguish hand washable from machine washable items.

    a) delicate clothing (clips, bras, panties, stockings)
    b) woolen articles
    c) blankets
    d) some types of draperies and slip covers
    e) check label

2. State why machine washing may harm delicate or special clothing.

3. Determine correct water temperature for selected fabrics (usually tepid or lukewarm).

4. Fill wash basin or other container with water.

5. Add mild detergent (one designed for hand washables).

6. Add articles and soak them several minutes.

7. Gently squeeze (not wring) articles free of excess water.

9. Place clothing in water free container.

10. Empty container used for hand washing.

11. Clean container.

12. Refill with rinse water (note temperature).

13. Place garments in rinse water.

14. Squeeze excess suds from garments.

15. Repeat rinsing process until water is clear.

16. Gently squeeze water from article.

17. Hang appropriate articles to drip dry.

    a) outside on line
    b) inside on clothes rack (using toweling or container to catch drippings)

18. Towel block appropriate items and dry away from direct sunlight (sweaters or other knit garments).

19. Store cleaning agents (basin, detergent, etc.) in appropriate area.

20. Fold articles appropriately.

21. Store in appropriate area.

WOOLEN, KNIT FABRICS

22. Soak sweaters, jerseys, and mittens in lukewarm soapsuds or in cold water with cold water soap made especially for wool.

23. Gently and thoroughly squeeze the solution through the garment being careful not to lift the garment out of the solution because the weight of the wet garment will stretch the yarns.

24. Rinse in lukewarm or cold water twice, again being careful not to pull the garment.

25. Squeeze out water, and roll the garment in a Turkish towel to remove excess water.

26. Shape on a flat surface, and dry away from sun or direct heat. Frames for drying wool socks and gloves are available and assure correct size and shape after washing.

27. Use a steam iron on the wrong side of the garment to touch it up if pressing is desired.

WOOLEN, WOVEN FABRICS

28. Wash in the same way as knit fabrics. Trousers, such as slacks and pants may be dried on frames, one for each leg. This will assure proper shape and also set the crease. Any wool garment may be dried by smoothing it out flat on a Turkish towel placed over several thicknesses of newspaper. Press if necessary.

VIII. Machine Wash.

1. Identify and operate:

   a) prescribed type of washing machine
   b) electrical plug or connection

   - c) machine water hookup
   - d) faucets
   - e) temperature control
   - f) water level control
   - g) wash cycle control
   - h) filter
   - i) agitator

2. Connect power source.

3. Turn on water supply (correct any leaks).

4. Select proper setting for:

   - a) normal wash
   - b) wash and wear
   - c) delicate
   - d) time setting

5. Select proper water setting for:

   - a) cold
   - b) warm
   - c) hot

6. Select proper water level setting:

   - a) low
   - b) medium
   - c) high

7. Start machine to fill the tub.

8. Load and distribute clothes evenly.

9. Add detergent, bleach, and softeners.

10. Correct load balance as signal indicates.

11. Practice safety rules:

   - a) check tub for foreigh objects before washing
   - b) keep hands out of machine when operating
   - c) keep children from playing on or in machine
   - d) check for leaks and avoid using machine while floor is wet.
   - e) wait for machine to completely stop before removing clothes

IX. Outdoor Drying

1. Hang clothes so that they do not touch the ground.
2. Hang clothes to allow for even drying.
3. Avoid using metal pins on wet articles.
4. Check clothes for dryness.
5. Remove clothes from line.
6. Fold or hang as needed for storage.
7. Describe a method for storing clothespins.

X. Indoor Drying

1. Prepare floor for dripping.
2. Hang articles in a well ventilated area.
3. Hang articles in an area with minimum travel.
4. Take clothes down when dry.
5. Fold or hang for storage.

XI. Dryer Drying

1. Identify and operate:
    a) prescribed type of dryer
    b) electrical plug or connection
    c) temperature control
    d) timer control
    e) lint trap
2. Connect power source.
3. Select proper temperature setting.
    a) normal to high
    b) wash and wear--medium
    c) delicate--low
    d) others depending on dryer
4. Set time control for desired length of time.
5. Clean lint trap.

6. Load clothes in dryer.

7. Close door and start machine.

8. When cycle is complete, check for dryness.

9. Reset timer if necessary.

10. Remove dry clothes and fold or hang as needed for storage.

XII. Fold and Store Articles

1. Place all articles to be folded in convenient location.

2. Fold articles consistently for easy storage.

3. Fold towels, sheets, pillow cases and diapers correctly.

    a) fold in half with edges even
    b) fold in half again in opposite direction, edges together
    c) fold article in half again if article is large
    d) keep part of article on table while folding if article is large

4. Fold shirts with the least amount of wrinkles.

    a) button or zipper shirt
    b) lay on table front side down
    c) smooth away wrinkles with hand
    d) fold each side toward the center in thirds
    e) lay sleeves down and smooth out wrinkles
    f) fold top of shirt to the bottom
    g) smooth out wrinkles
    h) store articles

5. Fold slacks to avoid wrinkles

    a) close zippers and fasteners
    b) pick up slacks by cuffs
    c) fold so that seams on both legs are together
    d) lay slacks on table and smooth out wrinkles by hand
    e) fold slacks in half--cuffs to waistline
    f) fold slacks in half again if necessary

6. Identify common storage areas and their use.

    a) closets
    b) dresser and chest of drawers

- c) shoe rack or box
- d) hangers (iron and wooden for pants)
- e) blouse and skirt rack
- f) belt and tie ring
- g) cartons and trunks
- h) suitcases
- i) garment bags
- j) linen closet
- k) other

7. Identify storage areas as places to protect garments from:
   - a) moth worms
   - b) mildew
   - c) sunlight
   - d) dust and/or soil

8. Explain how proper storage insures longer life to garments.

9. Store selected articles of clothing in appropriate areas:
   - a) closets:
     - 1) shirts and blouses
     - 2) dresses and skirts
     - 3) slacks
     - 4) all weather coats and jackets
     - 5) ties
     - 6) belts
     - 7) suits

     (store articles used most often in front)
   - b) closet floor
     - 1) shoe boxes
   - c) closet shelf:
     - 1) cartons
     - 2) small trunks
   - d) chest or dresser drawers:
     - 1) underwear and socks, stockings, handerchiefs in top drawer for easy accessibility
     - 2) pajamas, night gowns, lightweight robes
     - 3) sports wear--shorts and shirts
     - 4) sweaters, scarves, gloves, mittens
   - e) shoe rack or box
     - 1) shoes, rubbers, etc.
   - f) hangers (explain why one doesn't use iron hangers for wet clothing)
     - 1) skirts and blouses
     - 2) dresses
     - 3) coats
     - 4) suits
     - 5) slacks

- g) blouse and skirt rack (self explanatory)
- h) belt and tie ring (self explanatory)
- i) cartons and trunks (storage of clothing not frequently used)
    - 1) blankets
    - 2) bedspreads
    - 3) "outgrown" articles
    - 4) special season garments
- j) garment bags--protective device for:
    - 1) woolen articles
    - 2) suits
    - 3) dresses
    - 4) seasonal clothing
    - 5) draperies
    - 6) other
- k) linen closet
    - 1) towels and wash cloths
    - 2) sheets and pillowcases
    - 3) blankets
    - 4) bedspreads
    - 5) pillows
    - 6) toilet articles
    - 7) other

10. Use moth balls, flakes and disinfectants in a protective manner.

XIII. Iron

1. Identify the iron and ironing board.

2. Set up board correctly.

3. Attach pad and cover to board.

4. Set up iron (usually steam dry iron).

5. Plug iron into convenient outlet.

6. Identify materials and select proper temperature for articles to be ironed.

7. Fill iron with water (distilled water preferred).

8. Stand on appropriate side of board (depends on handedness).

9. Iron the article correctly.

10. Iron common pieces of clothing

    a) dress shirt or blouse
    b) handkerchiefs (or other straight pieces)
    c) slacks
    d) dresses
    e) other

11. Iron shirt or blouse appropriately.

    a) collar--outside
    b) sleeves--both sides
    c) cuffs--inside and out
    d) left front of shirt
    e) back of shirt
    f) right front of shirt

12. Iron straight pieces appropriately

    a) smooth and flatten areas to be pressed
    b) begin in corner of garment and proceed horizontally
    c) move to another area and repeat above motions
    d) fold article carefully for storage and all similar articles in same manner

13. Iron slacks appropriately.

    a) iron insides of pockets, after turning upper part of garment inside out
    b) turn upper part of garment right side out and press front and back including wasitband
    c) prepare leg part with fold on the crease (inside out)
    d) hold leg part taut
    e) iron inside leg and crease going with material grain
    f) turn leg to outside position and repeat
    g) repeat steps on opposite leg
    h) remove slacks from board
    i) hang correctly on pants hanger
    j) store in appropriate place

14. Iron dresses appropriately.

    a) follow steps "a)" through "f)" for blouse ironing (item 11)
    b) place skirt part on board with remaining skirt flowing freely
    c) hold skirt taut at waist
    d) iron in direction of fabric grain taking care to iron tucks and pleats carefully

    e) continue around dress in same fashion
    f) restore dress to hanger
    g) store in appropriate area

15. Hang and store ironed articles of clothing properly.

16. Turn iron off (on control attachment).

17. Unplug iron by plug itself not cord.

18. Empty excess water into appropriate area.

19. Return ironing equipment to appropriate place (iron will cool before doing so)

20. Clean plate of starch buildup if necessary.

21. Explain why irons are never left plugged-in when not in use.

22. Explain why one never:

    a) uses an iron with frayed cord
    b) uses an iron while hands are wet
    c) leaves hot or cold iron in easy reach of small children
    d) leaves iron and board unattended to do other chores
    e) leaves iron on board for extended periods

XIV. The Laundromat

1. Locate convenient laundromat.

2. Identify and use machines (washer and dryer).

3. Sort articles to be washed according to:

    a) fabric
    b) water temperature

4. Check pockets for objects.

5. Use appropriate cleaning agents in proper amounts.

    a) detergent
    b) bleach (liquid and/or dry)
    c) fabric softener
    d) spray spot and stain remover

6. Load machine (being careful not to overload).

7. Set controls for:

    a) fabric
    b) water level
    c) temperature

8. Insert correct change into specified machine slots.

9. Ask laundromat attendant for change or use change machines.

10. Remove clothing to laundry cart or basket when wash is finished. (Recheck washer for articles).

11. Loosen articles if they are tightly matted to:

    a) ensure even drying
    b) reduce wrinkles

12. Sort clothing for drying according to:

    a) fabric
    b) drying temperature

13. Load dryer(s).

14. Set controls to proper settings.

15. Insert correct change into specified machine slots.

16. Remove clothing when dryer stops and clothing is dry. Empty lint trap. Check for metal or other objects that should not be in dryer.

17. Sort articles that need ironing and hang or fold.

18. Fold remaining articles and place them in carton or laundry basket for convenient transport.

XV. Coin Operated Dry Cleaning (laundromat without attendant)

1. Determine which clothes need to be dry cleaned.

2. Select clothes that can be put in a coin operated machine.

3. Remove stains and foreign objects.

4. Weigh clothes on scale.

5. Load machine.
6. Determine coins needed for dry cleaning.
7. Insert coins in machine.
8. Read the directions or ask for help from attendant.
9. Prepare to take clothes home.
    - a) fold or hang
    - b) bag or cover clothes

XVI. Commercial Dry-cleaning

1. Identify and select a convenient dry-cleaning facility.
2. Transport items to cleaners.
3. Give items to attendant. Inquire about cost.
4. Receive and keep identification receipt for clothes.
5. Return to dry cleaners to present receipt and pay bill.
6. Explain how a dry-cleaning route man can eliminate the necessity of traveling to the cleaners.

XVII. Diaper Care.

1. Explain the reasons for using special care in washing diapers separately from other laundry.
    - a) danger from bacteria: baby's health, health of rest of family
    - b) difficulty in removing stains without special attention and pre-soaking
    - c) need for softening diapers to prevent diaper rash.

THE
VERMONT
GUIDE

chapter 3

Learning for Earning

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BEGINNING WOODWORKING

This unit is designed principally for junior high students whose laboratory experiences are limited to the use of hand tools. Based on six hours of instruction per week, the unit may be covered in four to six weeks.

BEGINNING WOODWORKING RESOURCES

TEXTS

Zimmerman, F. Exploring Woodworking. Goodheart and Wilcox.

Sunset Books. Basic Carpentry Illustrated. Lane Books, Menlo Park, California.

FILMSTRIPS/TAPES

Woodworking Series, Doubleday Multimedia

BEGINNING WOODWORKING

Terminal Performance Objective

After completing prescribed learning activities, the student will be able to complete a woodworking project involving at least three woodworking operations. The project will compare in measurements, construction, and workmanship to a similar project developed by a novice woodworker.

I. Measurements

1. Measure and lay out distance up to one foot within 1/4" accuracy using a scale, tape, and yardstick.

2. Lay out lengths and widths working from a simple sketch.

II. Squares

1. Try square

   a) test for straightness and squareness using a try square
   b) mark lines on surface of a board--lines running vertically across board and lines running horizontally along edge of board using try square

2. Combination Square

   a) mark an edge at 45°
   b) mark widths on a board using the combination square as a marking gauge

III. Hand Planes

1. Identify block, smooth, and jack planes and demonstrate how to check for adjustment and sharpness before using.

   a) unscrew plane-iron cap that holds the blade and check sharpness
   b) adjust the blade after replacement lateral to the base by way of the lateral adjusting lever
   c) adjust the depth of cut with the adjusting nut (clockwise lowers the blade)
   d) clamp a piece of softwood in a vise; test the depth of cut and sharpness of cutting edge. (light cut will produce the smoothest surface)

2. Examine direction of grain in wood stock.

   a) clamp a piece of scrap wood in a vise and plane with or along the grain; the tool should pass smoothly across the surface
   b) plane piece on the best face first applying pressure on the knob, then the handle. Check the surface for trueness with a square.

3. Practice using the different planes on specific surfaces.

   a) clamp a piece in a vise and smooth the surface with a smoothing or jack plane with conformity to direction of grain.
   b) use a block plane to square off end grain.
   c) use block plane for making chamfer and bevel cuts. Layout lines for the cut, and hold the plane at the desired angle for procedure

IV. Hand Saw - Ripping and Crosscutting

1. Layout a guide line.

2. Hold stock in a vise.

3. Hole saw with right hand, applying a firm but not too tight a grip.

4. Stand properly with shoulder and eye guided on the line of cut.

5. Start cut close to line on the waste side.

6. Start saw with short backward strokes.

7. Use full blade using about a 60° angle for ripping and 45° for crosscutting.

8. Finish cut carefully with easy strokes. Support section being cut off to avoid splintering.

COPING SAW

9. Place coping saw blade in a frame with saw teeth pointing back toward the handle.

10. Secure stock in a vise or on a bench.

11. Use light storkes to start saw close on line on the waste side.

12. Practice cutting irregular shapes; cut inside and outside curves.

V. Hammer - Nailing - straight claw or curved claw (10 oz.)

1. Grip the hammer properly, near its end.

2. Hold nail near the head with the other hand between thumb and forefinger.

3. Start the nail by giving it a few taps.

4. Try to drive the nail at a slight angle for greater holding power using a few hard strokes.

VI. Pulling Nails

1. Use a straight or curved claw hammer.

2. Wedge the V of the claw around the nail's shank between the nail head and the wood.

3. Rock the hammer backward.

4. Place a flat stick between the hammer and the surface to keep from marring the board. (Leverage may be increased by placing thicker pieces of wood between the claw and the surface.)

VII. Nail Set

1. Select the proper size nail set.

2. Hold the nail set between the thumb and first two fingers.

3. Place the tip of the nail set in the recess of the finish nail which is being set.

4. Set all finish nails a short distance below the surface.

VIII. Screwdriver (Screws with slotted heads are driven with a "regular" screwdriver)

1. Select the proper size screwdriver to fit the screw slot.

2. Check screwdriver tip to make sure corners are square and not knife edged.

3. After starting the screw in the wood (turning by hand or tapping lightly with a hammer) hold the screwdriver handle with one hand and guide it in the slot with the other to keep from slipping and moving the wood.

IX. Fasteners

1. Nails. Identify and state some common uses of the:
    a) brad
    b) finish nail
    c) box nail
    d) common nail

2. Screws.
    a) identify and state the proper use of flat head, round head, and oval head screws
    b) drill holes in the top board to fit screw shank
    c) for flat head screws, countersink the top board to make the screw head flush with board
    d) turn screw snugly into wood. Do not overdo it, however, lest the board be stripped

3. Glue - prepared casein glue
    a) check proper fit of all parts to be glued
    b) preset clamps in preparation for tightening around stock
    c) apply glue to surface evenly. Avoid slopping too much glue as it must be scraped after setting.
    d) clamp all parts evenly or drive brads or nails in place to hold glue until it sets

4. Clamps - C-clamp
    a) C-clamp has an adjustable screw which holds stock firmly
    b) use scrap stock on both screw and anvil end to avoid marring stock

5. Spring clamp

    Presses against stock with its fingers which are activitated by a strap spring.

6. Bar clamp
    a) use for gluing several pieces of stock together
    b) when widths are uneven it may be necessary to use extra wood strips on edge held with hand screws. These are placed across the joints to assure straightness

X. Finishing

1. Hand sanding.

    a) distinguish between the various sandpapers by experimenting on scrap wood with the various coats
        1) closed coat - fine paper for finishing
        2) open coat - very coarse for heavy sanding
    b) employ the sanding block method on a rough piece of wood:
        1) attach appropriate sized paper to a sanding block and smooth a flat surface making strokes with the grain
        2) clamp sanding block in a vise and smooth small items by bringing across the abrasive

2. Painting

    a) apply a coat of primer, well stirred, to a piece of wood that has been thoroughly cleaned
        1) flow on an even thin coat angling toward the edges. Smooth paint by using tips of bristles
        2) allow to dry overnight
    b) sand prime coat lightly with 4-0 sandpaper
        1) apply finish paint to total surface and allow to dry overnight
        2) apply second coat if needed
    c) apply shellac to new or scraped wood
        1) dilute shellac, 2 parts shellac to 1 part alcohol
        2) flow on coat of liquid and allow to dry one hour
        3) sand down when dry, dust off residue and apply shellac. Repeat for each new coating.
    d) varnish - same as shellac using appropriate solvents
    e) waxing - same as shellac using appropriate solvents

ADVANCED WOODWORKING

Far more individuals engage in woodworking as an avocational pursuit than as a livelihood. Regardless of the rationale given for incorporating a woodworking unit in a general provocational curriculum, the skills to be learned through this unit will provide an introduction to woodworking.

ADVANCED WOODWORKING

Terminal Performance Objective

After completing prescribed learning activities, the student will be able to complete a woodworking project involving at least five woodworking operations. The completed project will be judged satisfactory by the course instrucotr. Adherence to standard construction procedures as well as the quality of the completed project will be evaluated.

I. Safety

1. Secure loose clothing and long hair before operating machines.
2. Remove ties, rings, watches, etc. before working in laboratory.
3. Wear safety glasses.
4. Report injuries of any type immediately.
5. Keep fasteners or hardward of any description out of the mouth.
6. Refrain from throwing tools or any type of material to another person.
7. Keep working area free of excess waste, such as shavings and pieces of wood.
8. Secure assistance before cutting or planing large stock with power tools.
9. Exercise care when handling rough stock.
10. Lift heavy objects with judgment.
11. Keep fingers away from the cutting edges of tools.
12. Protect the cutting edge of sharp tools.
13. Avoid the use of dull or broken tools.
14. Determine whether tool handles are in good condition and securely fastened.

15. Store clamped stock so that protruding clamps do not endanger fellow workers.
16. Observe special safety considerations unique to specific tools and operations.
17. Secure permission to operate machines.
18. Make sure all guards and eye shields are in place.
19. Clean and remove chips only when machines are not operating (use a brush, bellows or vacuum).
20. Check all machine adjustments.
21. Think through all operations carefully before operating a power tool.
22. Keep from talking to others when operating a power tool.
23. Make sure that spectators do not stand directly in line with revolving cutters or stock.
24. Make minor adjustments or repairs when power tool fails to operate.
25. Stand by a power tool until it stops.
26. Exercise alertness to sounds which indicate that power tool is not operating properly.
27. Keep alert for odors which indicate that power tool and/or stock is overheating.
28. Observe all special safety considerations for power tools.
29. Report all defective electrical outlets and cords.
30. Examine all stock for physical defects and foreign objects.
31. Store flammables properly.
32. Observe good housekeeping procedures.

II. Make a Bill of Material

1. List amount of lumber needed to complete a project from information given on a working drawing.

2. List hardware needed to complete a project from information given on a working drawing.

3. Estimate the number of board feet of lumber when given uncalculated amounts of lumber.

4. Prepare a bill of material for a woodworking project.

5. Give the following information when ordering materials from a lumber yard (mock or actual):

   a) kind of wood
   b) number of pieces
   c) size of lumber
   d) grade: hardwood
      softwood
      plywood
   e) rough or milled
   f) kiln dried or air dried
   g) rough, surfaced 2 sides or 4 sides

III. Select and Lay out Stock

1. Determine the type, dimensions, and grade of stock needed to complete a project.

2. Obtain stock.

3. Check stock for defects.

4. Mark specified dimensions on stock.

5. Lay out 180° angle with miter square.

6. Lay out 180° angle with framing square.

7. Lay out 180° angle with combination square.

8. Lay out 90° angle with framing square.

9. Lay out 90° angle with try square.

10. Lay out 90° angle with miter square.

11. Lay out 45° angle with framing square.

12. Lay out 45° angle with miter square

13. Lay out 45° angle with combination square.

14. Lay out 45° angle with T-bevel.
15. Lay out various angles with T-bevel.
16. Transfer or lay out irregular designs using proportional squares.
17. Use french curve to lay out irregular curves.
18. Use wing dividers to scribe circles.

IV. Cut a Board with a Hand Saw

1. Lay out a guide line.
2. Hold short pieces in a vise, place longer pieces on a saw horse.
3. Grasp the saw with right hand, with the thumb and index finger extended along the two sides of the handle.
4. Stand so that forearm, shoulder, and eye follow the line of the saw blade.
5. Secure the stock to be cut when using a saw horse.
6. Start the cut as close to the line as possible - on the waste side.
7. Start the saw with two or three light upward strokes.
8. Take short strokes, using the teeth at the toe of the blade when off the line. Twist the handle slightly to bring the saw back to the line.
9. Maintain correct position of saw for crosscutting at 45° and ripping at 60°.
10. Force a wedge into the kerf to free the action of the cutting edge of the saw.
11. Finish a cut carefully with easy strokes.

V. Plane Stock

1. Select the better of the two faces of a piece of stock.
2. Determine the direction of the grain on the edge and on the face of a piece of stock.

3. Clamp the stock.
4. Set the plane to cut a fine shaving.
5. Plane in direction of grain.
6. Test surface with a straightedge.
7. Fasten board securely in the vise.
8. Grasp the plane handle properly.
9. Take full length strokes while holding the plane level.
10. Test the squareness of an edge.
11. Plane half the distance across the end from one edge and plane the remaining half from the opposite edge.
12. Test with a try square from the face and from the edge.

VI. Chisel Stock

1. Pare horizontal surfaces.
    a) hold chisel with bevel up and back of chisel parallel to be cut
    b) grasp chisel correctly
    c) force chisel from side to side in a shearing motion
2. Cut end grain or shoulders.
    a) secure stock in bench while protecting the bench top with a bench hook or scrap piece of stock
    b) hold chisel with the bevel cut from the finish line and in a vertical position
    c) sight the direction of cut
    d) cut with only a portion of the width of the chisel

VII. Bore a Hole with Bit and Brace

1. Through bore
    a) locate center of hole on surface of stock with the use of intersecting lines
    b) mark center point with awl
    c) select the proper size auger bit for the hole and secure it in the jaws of a bit brace
    d) secure stock so that the surface is at right angles to the natural boring position
    e) place the tip of bit at the intersection of the lines

- f) hold the head of the bit brace so that the auger bit is at the desired angle with the surface of the work
- g) rotate the swing of the brace in a clockwise direction while applying pressure to the head
- h) check to assure that the hole is being cut at the desired angle using a try square or a T-bevel
- i) continue to bore the hole until the point of the screw comes through the opposite side
- j) remove bit properly
- k) turn the board so that the hole may be completed from the opposite side or clamp the work over a piece of scrap material and bore into the scrap piece.

2. Stop Bore

- a) bore a hole to a predetermined depth.

3. Counterbore

- a) demonstrate proper counterboring procedures.

4. Countersink

- a) ream out a hole with a countersink so that a flat head or oval head screw will be even with or below the surface of a piece of stock
- b) place the point of the countersink in the shank hole and ream out the hole
- c) test the countersink hole by placing a screw head in it. The width of the opening should be slightly larger than the width of the head of the screw

VIII. Drive and Draw Nails

1. Drive nails

- a) select the appropriate kind and size of nail for fastening task
- b) hold the nail firmly between the thumb and forefinger. Place the point on the spot where it will be driven
- c) grasp the hammer handle firmly near the end (not "choking" it by holding it near the head).
- d) give a slight tap to set the nail and then withdraw the hand when starting to drive. With a full swing of the wrist and forearm drive the nail in as far as it is to go
- e) keep the face of the hammer smooth and clean
- f) strike the nail squarely on the head. Keep eyes on the nail rather than on the hammer

g) leave a small portion of the nail to be driven home with a nail set when driving finishing nails

2. Draw Nails

   a) place a piece of wood under the claw of the hammer to prevent marring the stock and to keep the nail straight when drawing it
   b) pull nail out

3. Drive nails into hardwood

   a) hold the nail very tightly between the forefinger an thumb of one hand while driving with the other hand. If the nail should bend, pull it out and drive a new nail in the same place.
   b) apply soap or wax to the nail to make it penetrate more readily OR
   c) drill holes in the stock which are slightly smaller than the nails. Soap or wax on the nail will make nails penetrate more easily
   d) drive nails diagonally through one piece to toenail to another
   e) select a nail set with a point slightly smaller than the head of the nail
   f) hold the set firmly between the thumb and the forefinger of one hand
   g) place the point of the nail set on the center of the nail head with the hand resting on the surface of the stock. With the third finger guiding the point of the nail set, drive the nail about 1/8" below the surface. Keep the set from slipping off the nail head by holding the nail set in line with the nail.

XIV. Fasteners

1. Fasten softwood with screws.

   a) determine the kind, diameter, and length of screws. Screws should penetrate the second piece about two thirds the length of the screw.
   b) lay out the positions of the screws from the edge or the end of the stock
   c) drill a hole in the outside piece which is slightly smaller than the diameter of the shank of the screw. Test for the proper size by drilling a hole in a piece of scrap stock

- d) make a starting hole with an awl in soft wood
- e) hold the screwdriver at right angles with the surface of the board and in line with the screw. While driving, guide the screw and at the same time hold the end of the screwdriver in the screw slot with the thumb and index finger of the left hand
- f) keep the screwdriver from slipping out of the slot
- g) stop turning the screw when it has been "driven home" to prevent the stropping of threads which the screw has made in the wood

2. Fasten hardwood with screws.

   - a) drill small holes in stock in which to set screws. (Brass and aluminum screws are soft and likely to twist or break if holes are not drilled).
   - b) bore the hole in the outside piece first being sure that the hole is correct for the diameter of the shank
   - c) bore the pilot hole in the second piece or bottom piece to a length equal to that of the screw thread and slightly smaller than the core or root diameter
   - d) countersink for flat head or for oval head screws
   - e) put soap or wax on the threads of screws to make them drive easier
   - f) select appropriate size screwdriver

3. Cover screw heads

   - a) cover head of screws with plastic wood

4. Adjust handscrews.

   - a) identify handscrews of various sizes
   - b) identify the shoulder jaw , the screw jaw, and the middle and end spindles of a handscrew
   - c) adjust the handscrew as necessary
   - d) adjust the jaws to the stock and screw the middle spindle tight. Adjust the end spindle being sure to keep the jaws parallel so as to press evenly on the stock
   - e) take off the handscrew by releasing the end spindle and forcing the jaws apart

5. Adjust bar clamps.

   - a) prepare blocks or strips of wood from waste stock
   - b) determine the number of clamps to be used before starting to glue

- c) apply the glue and place the clamps in position, beginning with the one positioned in the center
- d) draw clamps together tight enough to bring the matched edges of pieces together

6. C-clamps

   - a) adjust C-clamps
   - b) tighten C-clamps

7. Contact cement.

   - a) apply the cement to clean surfaces only
   - b) let the cement dry until it is glossy
   - c) press the parts together, or tap very lightly with a mallet
   - d) align the surfaces carefully before they touch together

X. Joinery

1. Cut a dado joint.

   - a) lay out the dado
   - b) saw a dado
   - c) remove the waste stock with a chisel
   - d) fasten the dado joint

2. Cut a rabbet joint.

   - a) make a rabbet across the grain
   - b) cut a rabbet
   - c) assemble and fasten the joint
   - d) make a rabbet with the grain

3. Cut a mortise and tenon joint.

   - a) lay out the mortise
   - b) cut the mortise
   - c) assemble and fasten mortise and tenon

XI. Sand Wood Surfaces

1. Tear sandpaper by folding it.

2. Tear sandpaper using a straightedge.

3. Make a sandpaper block.

4. Sand flat surfaces.

    a) select the sandpaper best suited for the job
    b) hold the sanding block flat on the surface and draw the block back and forth, working with the grain of the wood. Apply even pressure.

5. Sand edges and ends.

    a) fasten the stock in a vise. Use both hands to hold the sanding block
    b) sand in one direction only when sanding end grain

6. Sand curves.

    a) use sandpaper block to back up sandpaper. Hold the sanding block firmly in both hands and work it in one direction
    b) when sanding rounded or oval edges, hold the sandpaper in one hand without using a sanding block
    c) when sanding a concave surface or an inside curve, place sandpaper around a rod or a round piece of wood and sand with the grain of the wood.
    d) sand until the work is perfectly smooth and entirely free of blemishes
    e) remove sharp arrises by sanding lightly with sandpaper on a block.

7. Sand with the orbital sander

    a) fasten the stock firmly to a table or bench
    b) select an abrasive of very fine grit
    c) use both hands in sanding, but guide the sander with the dominant hand
    d) avoid running over the cord

XII. Finishing

1. Apply stain.

    a) make sure there is sufficient stain of the desired color to complete the entire job
    b) mix the stain thoroughly by stirring it with a metal rod to break up any color pigment that may have settled to the bottom of the container

    c) reduce stain if too dark, to the desired shade with a solvent that is indicated in the directions on the can. (A darker shade can be obtained by adding a darker shade of a similar stain).

d) dip a brush into the stain about one-fourth the length of the bristles. Remove the surplus stain by pressing the brush lightly against the edge of of the can
e) apply the stain evenly and rapidly, brushing with the grain. Begin staining on the under surfaces or the back of the project
f) work away from inside corners. On vertical surfaces, begin at the top and work down at the same time brushing outward toward the arrises. When close to the arrises, brush carefully to prevent the bristles from throwing stain
g) brush with the grain for the entire length of a flat horizontal surface
h) wipe the surface with a clean rag to produce an even shade
i) allow the stain to dry at least twenty-four hours before beginning to apply the remaining coats of finish
j) clean the brush carefully with appropriate solvent
k) return all tools and materials to their proper places. Wipe cans or cups with rags which have been moistened with kerosene. Clean up any stain that may have fallen on the floor or bench
l) place oily rags in a fireproof container

2. Apply spirit stains.

a) prepare the surface. Make sure that markings of tools, dirt, and grease spots have been removed
b) sponge the surface of the wood, including the ends, with warm water to raise the grain
c) when the surface has dried for 24 hours, sand it lightly with the grain with 5/0 (180 mesh) garnet paper
d) apply the stain with a brush. Dip the brush in the stain about one-fourth the length of the bristles. Be sure the brush is well loaded with stain. Brush with long strokes with the grain and work rapidly to even out the stain before it dries
e) apply the stain first to the most difficult places
f) apply a second coat when one coat of stain is too light. Be sure the first coat is thoroughly dry before applying a second coat
g) clean the brush in alcohol, wrap it in paper or a lintless cloth, and store it after the staining is finished.

3. Apply paste filler.

   a) determine if stain is perfectly dry before applying filler
   b) apply a wash coat of shellac as a sealer. Sand lightly when dry with 8/0 (280 mesh) garnet paper
   c) color natural filler with stain or obtain a filler of the desired color
   d) stir the filler in the container
   e) apply the filler with a stiff bristle brush. Work it into the pores by brushing with and across the grain
   f) allow the filler to dry until the gloss has disappeared
   g) force the filler into the grain by stroking it in with the palm of the hand
   h) wipe off the surplus filler with a coarse cloth or burlap. Work across the grain with even pressure in one direction until the surface is clean. With a soft cloth wipe lightly with the grain
   i) allow the filler to dry for 24 hours and sand lightly with 5/0 (180 mesh) garnet paper to produce a smooth surface.
   j) apply a second coat of paste filler if necessary

4. Apply sealers

   a) apply the shellac with a brush by working one way with full length brush-wide strips from the center of the surface to the outside with care to apply only light pressure
   b) use a very light or "feathering" stroke to even up the coating before the shellac starts to set
   c) wipe sealer on or rub it into the wood with a rag and then wipe it off smooth with a clean rag when using a wiping sealer

XIII. Shellac

1. Prepare the surface.

   a) remove tool marks, dirt, and grease spots from the project
   b) sponge the surfaces with water, preferably warm water. Let surface dry for twelve hours
   c) when dry, sand the surfaces and edges with 5/0 (180 mesh) garnet paper. Remove all dust with a lintless cloth which has been slightly dampened with alcohol

2. Apply white shellac.

a) pour enough wash shellac solution into a glass container for the first coat
b) select a 1 1/2" varnish brush with long, good quality bristles
c) dip the brush into the shellac about one-third the the length of the bristles. Gently press the bristles against the inside of the container
d) apply the first coat of wash shellac as evenly as possible with long, fast, even strokes. Brush one way from the center of the surface to the outside and apply only light pressure
e) use a very light or "feathering" stroke to even up the finish before it starts to set. Work fast. (Spots that seem to have been missed should be left to be covered with the next coat.)
f) make all strokes from the center outward to the edge
g) place the project so the surface to be shellacked is horizontal whenever possible
h) allow at least eight hours for the first coat to dry, then sand it very lightly with 8/0 (280 mesh) garnet paper. Use a small piece of sandpaper held with the finger tips. Work carefully on one small area at a time. Sand with the grain and feel for for smoothness with finger tips
i) remove all dust with a damp cloth and apply a second coat of wash shellac
j) remove the dust and dirt with a damp cloth and apply a third coat of wash shallac after an eight hour period
k) allow eight hours for the third coat to dry and once again sand lightly with 8/0 (280 mesh) garnet paper
l) prepare a two-pound-cut solution for the fourth coat of shellac. Mix one part of a four-pound-cut shellac with one part of alcohol, or less
m) apply the fourth coat of the two-pound-cut shellac in the same manner that the wash shellac was applied
n) clean brush thoroughly in alcohol after shellac has been applied
o) give the final coat of shellac a rub down with No. FF pumice stone when it is dry
p) prepare a pad of soft cloth and saturate it with rubbing or paraffin oil
q) sprinkle some pumice powder on the pad and rub the surface, exercising care to work with the grain of the wood
r) rub until a high polish is produced. Wipe off the oil and pumice mixture and polish the surface with a soft dry cloth

XIV. Varnish

1. Prepare the surface.

   a) complete the final sanding, remove any dust, and examine the surface for marks, dirt, and grease before varnish is applied
   b) sponge all surfaces with water, preferably warm water. Let surfaces dry for twelve hours
   c) sand all surfaces with 5/0 (180 mesh) garnet paper when dry. Remove all dust with a lintless cloth which has been slightly dampened
   d) apply a wash coat of white shellac to seal the stain, or for a natural wood finish, the shellac coat is applied first
   e) allow eight hours for the coat to dry and then sand it lightly with the grain with 8/0 (280 mesh) garnet paper
   f) seal the filler if used with a coat of wash shellac. Next dry sand the surface with 8/0 (280 mesh) garnet paper
   g) varnish if close-grained wood is used

2. Apply varnish.

   a) select a quick-drying, high-grade rubbing varnish
   b) select a long-haired varnish brush of good quality
   c) thoroughly clean the varnish brush
   d) have on hand a clean glass jar or china cup container
   e) select a dust free room in which to apply the finish
   f) open the can of varnish. Pour enough varnish into a glass jar or cup for the first coat. Quickly put the lid back on the can and press it down tightly
   g) pour a small quantity of turpentine into the varnish in order to thin it down for the first coat
   h) dip the brush into the varnish lightly to prevent the formation of bubbles. Remove surplus varnish on the edge of the container
   i) brush the varnish from the center to the outer edges
   j) clean and brush carefully in turpentine and store it in a piece of clean paper after the first coat of varnish is applied
   k) allow twenty-four to forty-eight hours for the varnish to dry
   l) after varnish dries, sand lightly in the direction of the grain using 8/0 (280 mesh) garnet paper. Sand with a small piece of sandpaper held with the finger tips. Work carefully on one small area at a time. Sand with the grain and feel for smoothness with your finger tips

m) brush off the particles which result from the sanding
n) carry the project to the finishing room and wipe the surface carefully with a clean cloth which has been dampened with turpentine
o) apply the second coat, using the undiluted varnish
p) allow the second coat to dry for forty-eight hours or more
q) apply the third or last coat in the same manner as the second coat
r) allow the third or final coat to dry for three or four days; rub it down with No. FF pumice stone and rottenstone
s) apply wax if desired

XV. Apply Inside Paint

1. Prepare surface.

a) use No. 1/2 and then 2/0 sandpaper to make a smooth surface
b) cover pitchy places and knots with shellac. Yellow pine, fir, and similar pitchy woods should be given a first coating of shellac. Shellac prevents the pitch from penetrating the paint and discoloring it. Shellac tends also to bind the knots in place
c) sand the surface again with 2/0 (100 mesh) sandpaper and dust it carefully

2. Apply the paint.

a) use a prepared flat paint of the desired color for the priming coat if the wood is not pitchy
b) shake the can of paint
c) with a stirring rod or special stick, stir the paint to loosen and dissolve every particle of pigment
d) pour the paint back and forth from one container to another
e) carry paint in a two-quart container while painting
f) brush the first coat, or priming coat, thoroughly into the wood
g) fill all cracks, nail holes, and crevices with putty, hard wax or plastic wood
h) allow the priming coat to dry for at least twenty-four hours and then sand it with 2/0 (100 mesh) sandpaper until the brush marks and rough places are removed
i) apply a second coat of paint (the same variety as the final coat)

- j) apply a final coat just as it comes from the can without thinning. Thoroughly stir the contents of the can. Apply paint in a uniform smooth coat, being careful that brush laps do not show
- k) with turpentine or kerosene, clean up any paint that may have fallen on the floor. Place all oily rags in a metal container
- l) clean the brush with turpentine or brush cleaner when painting is completed

3. Clean brushes.

- a) remove surplus finishing material by squeezing the brush against the inside of the container
- b) wash the brush in an appropriate solvent (Alcohol is a solvent for shellac)
- c) use clean pieces of cloth to pull finishing material from the brush. Use another piece of cloth to draw out remaining material
- d) wash the brush in soap and hot water until perfectly clean
- e) wrap the brush in a piece of paper or a soft, clean, lintless cloth and store it

XVI. Jig or Scroll Saw

1. Demonstrate use of:

- a) tension sleeve
- b) guide post
- c) upper chuck
- d) lower chuck
- e) on-off switch
- f) hold down foot
- g) tilt table adjustments

2. Demonstrate safety precautions

- a) hold-down foot should be dropped directly on the stock which is being cut
- b) finger should be kept clear of the saw blade
- c) no adjustments should be made while the machine is in operation

3. Saw enclosures.

- a) lay out the enclosure on the stock
- b) bore a large enough hole to admit the saw
- d) select a suitable saw blade

- e) tighten the clamping screw while holding the blade in the lower chuck
- f) press down on the upper plunger until the jaws of the chuck fit over the saw blade, then tighten the clamping screw
- g) revolve the saw by hand to test the tension
- h) lower the top guide until stock will snugly pass under it
- i) tighten the clamping screw to lock the guide in position
- j) place guards in position
- k) start machine and wait until saw is running at full speed before starting the cut
- l) move the work gently against saw and start the cut in a waste stock
- m) hold the work loosely while guiding the saw along the outline
- n) refrain from crowding or cramping the saw
- o) stop the saw
- p) cut kerfs in the stock prior to cutting sharp curves

XVII. Band Saw

1. Demonstrate use of:

   - a) blade guard
   - b) table
   - c) miter
   - d) table clamp
   - e) upper and lower adjusting screw for blade guide, ball bearing, blade support
   - f) blade
   - g) guide post adjustment

2. Demonstrate safety rules:

   - a) observe demonstration by instructor
   - b) seek permission from instructor before using
   - c) complete written safety test
   - d) adjust top guide to within 1/4" of work
   - e) check blade guides and wheel
   - f) push work straight into blade making sure not to twist blade
   - g) use sharp blade
   - h) keep hands and fingers away from blade

3. Saw long curves or straight lines.

   - a) true and reduce stock to required thickness
   - b) lay out desired shape on stock

c) place stock on a saw table with its edge close to saw blade
d) loosen clamping screw, move the guide up or down to give about 1/4 inch clearance between stock and bottom of guide
e) adjust the guide so that the blade fits the slot and rubs lightly against the rear of the slot. Adjust the lower guide
f) start the machine
g) start cutting around the outline
h) refrain from crowding the saw
i) stop the machine, loosen the clamping screws and remove the saw blade, then remove the work

4. Make exterior cuts.

a) lay out an outline
b) insert blade in the jaws of the lower chuck and tighten clamping screw
c) proceed as in sawing enclosures

XVIII. Jointer

1. Demonstrate the operation and use of:

a) rear outfeed table
b) fence
c) front infeed table
d) rabbeting ledge
e) rear table adjusting hand wheel
f) base
g) front guard
h) depth scale
i) front infeed table
j) tilt scale
k) dual fence control handle
l) front table adjusting hand wheel

2. Demonstrate safety procedures:

a) position hands on top of the work
b) hold the work firmly on the table or against the fence
c) turn the concave side of stock toward the table
d) refrain from running a piece of stock shorter than 12 inches across the jointer
e) refrain from operating the jointer unless the guard is in place
f) refrain from using a jointer when the knives are dull

3. Surface stock.

   a) adjust front table so that desired cut can be made
   b) set the fence at right angles to table. Test with a try square
   c) see that guard is in place and working
   d) engage starting mechanism and allow machine to gain full speed before starting to joint or plane stock
   e) observe stock carefully
   f) stand slightly back of the cutting head
   g) position stock so that the knife will cut with the grain, not against it
   h) place left hand about six or eight inches from the front end of the board and right toward the rear, then holding the stock down firmly move it forward against the knives
   i) adjust the machine before making further cuts
   j) use push stick appropriately

4. Edge stock.

   a) adjust front table for desired depth of cut
   b) turn the working face of the piece against the fence, then, holding the piece firmly against the fence move it steadily forward

XIX. Circular Saw

1. Demonstrate use of:

   a) miter gauge
   b) fence
   c) front graduated guide bar
   d) fence clamp handle
   e) fence micro set knob
   f) "T" slot for miter gauge
   g) lock knob
   h) saw tilt handwheel
   i) saw raising handwheel
   j) saw tilt scale
   k) switch
   l) splitter
   m) sawdust clean out

2. Demonstrate safety rules:

   a) use of guard
   b) blade exposed only 1/4" above board
   c) use of push stick
   d) use of clearance block

e) position hands properly
f) have teacher inspect all special set ups
g) never use warped board
h) resaw only with permission
i) use ripping fence
j) use cross cutting fence
k) identify emergency shut off
l) assume safe standing position

3. Operate circular saw

a) loosen arbor nut
b) set height of blade
c) position hands for ripping wide stock
d) position hands for ripping narrow stock
e) position helper for ripping long stock
f) position hands for crosscutting stock
g) position attachments for clearance block
h) cut square stock
i) cut bevel on stock
j) cut a chamfer
k) cut a miter joint
l) cut a crosslap joint
m) cut a rabbet joint
n) cut a dado joint
o) cut a groove
p) cut a gain

XX. Sabre Saw

1. Demonstrate safety rules:
a) make certain the switch is "off" before the cord is plugged into an outlet
b) determine whether there is adequate grounding
c) explain why one does not use hand power tools near wet ground
d) keep electric cord from becoming fouled
e) solidly support the work which is to be cut
f) select proper blade for type of work
g) lock blade securely, and check it, before sawing
h) check saw regularly for loose parts or screws
i) clean saw periodically
j) always disconnect cord when cleaning, repairing, adjusting, or changing blades
k) cut off motor before the blade is removed from the work
l) remove all obstructions from the stock where the blade will catch

2. Demonstrate use of sabre saw accessories.

    a) table clamps
    b) tilting guide plate (or shoe)
    c) back up disc (can be rotated as it becomes worn in order to present a new surface)
    d) drill(s) and bit(s) to make holes in stock for inside sawing
    e) three types of blades:
        1) wood cutting
        2) metal cutting
        e) knife
    f) layout of desired shape on stock

3. Operate sabre saw.

    a) insert blade and tighten set screw(s) firmly
    b) grasp handle firmly
    c) rest the front end of the guide shoe plate on the surface of stock
    d) align the cutting edge of the blade with a line scribed on the stock
    e) move saw forward with firm downward pressure and sufficient forward pressure to allow blade to move freely without breaking
    f) follow scribed lines
    g) position the guide plate flat on the surface at all times

ADVANCED WOODWORKING PROJECT

PROJECT: Antique Rifle Model of Student's Choice

I. Identify, Select, and Use:

1. Drawing tools and materials:
    - a) straight edge
    - b) T-square
    - c) tri-square
    - d) pencils (as to hardness)
    - e) French curves
    - f) rule
    - g) inking
    - h) opaque projector
    - i) printing guides
    - j) papers (as to finishes)
2. Mathematics:
    - a) divide fractions
    - b) multiply fractions
    - c) add fractions
    - d) subtract fractions
    - e) figure proportions
    - f) measure
    - g) price goods
    - h) purchase goods
    - i) identify currency
    - j) make change
3. Woodworking tools and materials:
    - a) band saw
    - b) sabre saw
    - c) drill press
    - d) hand drill
    - e) belt sander
    - f) chisels
    - g) drum sander
    - h) draw knife
    - i) spoke shave
    - j) jack knife
    - k) files
    - l) sand papers
    - m) claw hammer
    - n) ball-peen hammer
    - o) paint brushes
    - p) stains
    - q) sealers
    - r) waxes
    - s) router
    - t) coping saw or scroll saw

4. Metal working tools and materials:

    a) hack saw
    b) punches
    c) scribers
    d) electric hand drill
    e) bits
    f) files
    g) emery cloths
    h) ball-peen hammer
    i) oxy-acetylene welding torch (optional)
    j) lead melting pot and heater (optional)
    k) buffing wheel
    l) taps
    m) dies
    n) tap and die holders

II. Draw Rifle to Scale

1. Select object with at least one measurement given (length).

2. Proportion other dimensions to determine what they will be.

3. Tape paper to wall on which to project rifle image.

4. Arrange opaque projector and picture so that projection is not distorted and gives all proper dimensions which have been figured in step "2." above.

5. Trace (lightly) with pencil to one edge of projected line (which will be somewhat thickened by distance of projector from the wall).

6. Recheck proportions against step "2." above.

7. Redraw, using straight edge and various drafting curves.

8. Ink and put in dimensions.

III. Make Working Drawing (profile, under, over, muzzle, butt plate)

1. Note projections, grooves, cut outs, etc. on actual rifle. Observe and discuss and determine proportionate measurements for the rifle.

2. Using actual rifle as guide, draw under, over, muzzle and butt views including all metal work (trigger guard, ramrod clips, butt plate, patch box, etc.)

3. Redraw using mechanical drawing devices.

4. Ink and put in dimensions.

5. Title blueprint.

6. Make templates of all metal parts by tracing them from working drawing onto onion skin paper.

IV. Select and Make Bill of Materials

1. List minimum dimensions of the piece of lumber required in board feet and linear feet.

2. Select the proper kind of wood by referring to gun manuals.

3. Call lumber companies (two or three) for estimates of cost of rough lumber.

4. Decide whether this cost is reasonable in view of the budget. If not, choose a less suitable, but cheaper wood or consider a smaller project (pistol).

5. Repeat above for barrel steel (hexagonal, octagonal, or round).

6. Write bill of material and estimate the cost before purchasing the materials.

7. At lumber company check stock for dimensions, grade, kind, warp, other defects, and run of grain.

8. Purchase material. Sign and keep one copy of receipt.

V. Lay out Design on Wood

1. Sand the surface on which the template will be placed.

2. Transfer template to wood by carboning back side of template (use straight edge, French curve, etc.) and scribing.

VI. Prepare Barrel Steel (42" to 46" as desired)

1. Hacksaw 1/4 of diameter to a given length (on working drawing) for tang.

2. Make butt end of the tang round by filing, then smooth the tang.

3. Hammer tang to approximate curve of stock where it will seat.
4. Center and punch two screw holes in tang.
5. Drill screw holes.
6. Counter sink screw holes to accompany flat head steel screws.
7. Cut muzzle end to correct length.
8. Round the muzzle end.
9. Bore to .54 caliber and to a depth of 4" to 6" using sequence of drill sizes.
10. Countersink bore slightly and polish.
11. Space and measure barrel for clip placement.
12. File out shallow (1/16") dovetails for clips.
13. Hacksaw slips from steel stock.
14. Bore clips (in vise) for 1/8" pins.
15. File clips to the appropriate angle to fit the dovetail.
16. Seat clips (should have to tap in place with hammer).
17. Scribe center line down round steel.

VII. Rough Out Stock

1. Cut stock profile using band saw.
2. Scribe the barrel seat groove and barrel tang recess lines down the center of upper stock face.
3. Calculate depth of groove and mark it at muzzle end of stock.
4. Gouge out barrel groove and tang recess with wood carving chisels. Sand smooth and adjust snugly to barrel.
5. Repeat for ramrod groove.
6. Chisel out barrel clip seat(s) and ramrod clip seats.

7. Seat barrel, affix with screws through tang (so that stock can be shaped to it).

8. Form and round stock, using draw knife, spokeshave, chisels, files, carving knives, and sand papers and belt and disc sanders.

9. Gauge and carve seating for patch plate.

10. Gauge and carve seating for lock mountings.

11. Gauge and carve seating for decorations (if any).

VIII. Form Additional Metal Parts by Hand Shaping Brass and Steel Parts, or by Lead Casting the Parts from Hand-Carved Wood Molds

1. Identify and make from templates:

   a) butt plate
   b) patch box plate
   c) lock mountings (right and left)
   d) trigger guard
   e) trigger
   f) cock
   g) frizzen (flash pan cover and battery)
   h) flash pan
   i) fizzen spring
   j) thimbles
   k) barrel clip plates
   l) ramrod
   m) sights (if any)
   n) muzzle clip (if any)
   o) decorations (if any)

IX. Assemble Rifle

1. Identify, select, and use:

   a) bolts (various types and sizes)
   b) nuts (various types and sizes)
   c) screws (various types and sizes)
   d) washers (various types and sizes)
   e) adhesives (various types and sizes)

2. Tap front and rear sights into barrel.

3. Make necessary adjustments in seatings so that all parts fit snugly.

4. Buff all metal parts of the stock.

X. Finish Stock

1. Rub with medium sand paper and steel wool, alternately, until a smooth finish is obtained.
2. Stain if necessary or desirable.
3. Allow stain to dry.
4. Rub alternately with fine sandpaper and steel wool until grain raised by staining is removed.
5. Restain if needed.
6. Rub with steel wool until smooth.
7. Wax and buff.
8. Repeat step "7." until a hard, smooth, semi-glossy finish is acquired.

CARPENTRY

This unit is geared for the student who has completed Woodworking I and II, and has identified woodworking as a possible pursuit in Building Trades or Vocational Carpentry.

This unit presents basic knowledge of the carpenter's hand and power tools, measurement of materials, and identification of elements of a building.

CARPENTRY RESOURCES

TEXTS

Wagner, W. Modern Carpentry. Goodheart-Wilcox, 1973.

Wagner, W. Modern Woodworking. Goodheart-Wilcox, 1967.

Smith, R. Principles of Light Construction. Prentice Ha-l, 1970.

The World of Construction. Industrial Arts Curriculum Project, McKnight & McKnight, 1970.

FILM

United Brotherhood of Carpenters and Joiners of America

FIELD TRIPS

On-site house construction
Large building sites
Vocational building trades classes
Lumber companies or building supply companies
Plumbing and heating supply companies
Pre-fab building companies
Electrical supply companies
Masonry supply companies
Cement product companies
Lumber mills, plywood mills

CARPENTRY

After completing prescribed learning activities, the student will be able to assist a carpenter to construct a frame according to a basic house plan. The quality of the student's assistance will be evaluated by the course instructor and any individual designated by the instructor.

I. Basic Hand Tools

1. Identify and use measuring tools:
    - a) zigzag rule
    - b) steel tape 6'-8'-12'-25'-100'
    - c) marking gauge
2. Identify and use squares:
    - a) combination square
    - b) framing or rafter square
    - c) try-square
3. Identify and use plates:
    - a) block plane
    - b) smooth plane
    - c) jack plane
4. Identify and use drills.
    - a) brace and auger bits and expansion bits
    - b) hand drill and twist drills
5. Identify and use wood chisels.
6. Identify and use saws:
    - a) cross cut saw
    - b) rip saw
    - c) coping saw

7. Identify and use level.

8. Identify and use dividers.

9. Identify and use trammel points.

10. Identify and use screw drivers.

11. Identify and use nail sets.

12. Identify and use chalk lines and other lines.

13. Identify and use bars:

    a) cats claw
    b) wrecking bar
    c) flat bar

II. Hand Power Tools

1. Identify and use cutting tools:

    a) hand power saw
    b) all purpose saw
    c) sabre saw

2. Identify and use power drills (1/4" and 1/2")

3. Identify and use sanders:

    a) orbital
    b) belt

4. Identify and use router.

III. Parts of a Building

1. Identify and state the purpose of floatings and foundations.

    a) concrete footings
    b) concrete walls
    c) cement block walls
    d) cement slab floor

2. Identify and state the purpose of floor framing elements.

    a) sill sealer
    b) sill
    c) floor joist (tail joist, double headers, double trimmers)

- d) steel columns
- e) carrying timber
- f) bridging
- g) sub flooring

3. Identify and state the purpose of exterior wall framing elements.

    - a) sole plates, top plates and double plates
    - b) studs
    - c) cripple studs
    - d) headers
    - e) rough sills
    - f) trimmer studs
    - g) wall connectors
    - h) corner studs
    - i) partitions
    - j) sheathing

4. Identify and state the purpose of ceiling sheathing.

    - a) bearing partition
    - b) ceiling joists

5. Identify and state the purpose of roof frame elements.

    - a) types - shed, flat, gable, hip, butterfly
    - b) truss - types
    - c) rafters (all types)
    - d) ridge board
    - e) sun-rise
    - f) overhang gable end

6. Identify and state the purpose of roof sheathing and finish.

    - a) felt paper
    - b) shingles - asphalt, cedar
    - c) roll roofing
    - d) soffit - fascia - cornice

7. Identify and state the purpose of windows.

8. Identify and state the purpose of doors - exterior and interior

9. Identify and state the purpose of stairs, stringers, risers and treads.

10. Identify and state the purpose of insulation.

    a) ceiling
    b) wall

11. Identify and state the purpose of exterior siding or finish.

12. Identify and state the purpose of interior wall and ceiling finish:

    a) wall board
    b) panelling
    c) plaster

13. Identify and state the purpose of floors.

    a) hardwood
    b) rugs (cloth, vinyl)

14. Identify and state the purpose of window trim and baseboard.

    a) casings
    b) stool
    c) apron

15. Identify and state the purpose of cabinets.

    a) vanity
    b) kitchen cabinets
    c) cabinet soffit

16. Construct or install floatings and foundation.

    a) concrete footings
    b) concrete walls
    c) cement block walls
    d) cement slab floor

17. Construct or install floor framing.

    a) sill sealer
    b) sill
    c) floor joist (tail joist, double headers, double trimmers)
    d) steel cameras
    e) carrying timber
    f) bridging
    g) sub flooring

18. Construct or install exterior wall framing.

    a) sole plates and top plates and double plates
    b) studs
    c) cripple studs
    d) headers
    e) rough sills
    f) trimmer studs
    g) wall connectors
    h) corner studs
    i) sheathing
    j) partitions

19. Construct or install ceiling.

    a) bearing partitions
    b) ceiling joists

20. Construct or install roof frame.

    a) types - shed, flat, gable, hip, butterfly
    b) truss (types)
    c) rafters (all types)
    d) ridge board
    e) sun-rise
    f) overhang gable end

21. Construct or install roof sheathing and finish.

    a) felt paper
    b) shingles - asphalt, cedar
    c) roll roofing
    d) soffit - fascia, cornice

22. Install windows.

23. Install doors - exterior, interior.

24. Construct stairs - stringers, risers, treads.

25. Install insulation.

    a) ceiling
    b) wall

26. Install exterior siding or finish.

27. Install interior wall and ceiling finish.

    a) wall board
    b) panelling
    c) plaster

27. Install floors.

    a) hardwood
    b) rugs - cloth, vinyl

28. Install windows trim and baseboard.

    a) casings
    b) stool
    c) apron

29. Construct or install cabinets.

    a) vanity
    b) kitchen cabinets
    c) cabinet soffit

IV. Basic Construction Measurements

1. Identify the basic measurements used in the building trades.

    a) linear footage
    b) board feet
    c) square feet
    d) square yard
    e) cubic yard

PRACTICAL ELECTRICITY

Practical electricity is designed to prepare prevocational students for entry into a regular electrical trades course. At this level the student should be able to recognize and select tools and materials. The student is also taught some of the common installation operations of an electrician.

PROJECTS

Underwriters Knot - Page 347 Practical Electrical Wiring

Wiring Door Bell - Page 354 Practical Electrical Wiring

Installing Switch Plates - Page 335 Practical Electrical Wiring

Counting and Identifying Symbols - Page 271 Practical Electrical Wiring

RESOURCES

Richter, H. P. Practical Electrial Wiring. McGraw Hill

Hand Tool Safety. Instructional Material Loan Service, University of Vermont. VOTC M 13

Pipe, T. Basic Electricity Training Manual. Howard W. Sims Company.

PRACTICAL ELECTRICITY

Terminal Performance Objective

After completing presecribed learning acitvities, the student will be able to assist a licensed electrician to perform basic house wiring operations. Adherence to safety rules will be a major factor in the evaluation of the performances associated with this unit.

I. Tools

1. Identify, select, and properly use:

   a) straight claw hammer
   b) screw driver (slat)
   c) screw driver (phillips)
   d) needle nose pliers
   e) side cutting pliers
   f) diagonal pliers
   g) cable skinners
   h) knife
   i) wire skinners
   j) wood ladder

II. Common Hardward

1. Discriminate between:

   a) cable
   b) staples
   c) wood screws
   d) sheet metal screws
   e) machine screws
   f) nails
   g) Romex connectors
   h) wire nuts
   i) tape
   j) single pole switch
   k) stranded wire
   l) solid wire

III. Skin Wire with Skinner

1. Match wire number with skinner slot.

2. Insert wire into notch.
3. Squeeze handle to cut through insulation.
4. Push skinner handles toward end of wire.
5. Remove insulation from wire.

IV. Make Eye in Solid Wire

1. Skin wire 1 1/2".
2. Grasp wire at point where insulation meets bare copper.
3. Bend wire 90° clockwise with needle nose pliers.
4. Move needle nose pliers to end of skinned wire.
5. Bend wire counter-clockwise 180°.
6. Close eye loop.

V. Connecting Solid Wire to Screw Terminal

1. Insert screw driver into slot.
2. Turn screw driver counter-clockwise.
3. Remove screw 1/2".
4. Insert eye with open end facing clockwise.
5. Squeeze eye closed with needle nose pliers.
6. Insert screw driver into slot.
7. Turn screw driver in clockwise direction until tight.

VI. Make Rat Tail

1. Skin two wires 1 1/2"
2. Grasp wires so end of insulation lines up.
3. Twist wires together with side cutters until tight.

VII. Skin Romex Cable

1. Identify Romex cable.
2. Identify Romex skinner.

3. Slide skinner over wire about 12".
4. Grip outside surface of skinner with hand.
5. Apply pressure to cut through jacket of cable.
6. Pull skinner to end of cable.
7. Open jacket with fingers.
8. Pull jacket back to end of cut.
9. Ring cable lightly with knife.
10. Remove cable jacket.
11. Remove paper on ground wire.

VIII. Remove Knockouts from Box

1. Locate knockout.
2. Identify knockout size.
3. Insert screw driver on edge of knockout.
4. Hit screw driver lightly with hammer.
5. Remove knockout with side cutters.

IX. Install Romex Staples

1. Identify No. 100 Romex staples.
2. Flatten Romex to surface.
3. Place staple over cable. (Without puncturing cable)
4. Tap staple with hammer until set.
5. Drive staples all the way (until snug).

X. Identify and Draw Symbols

1. Identify symbol for receptacle.
2. Identify symbol for single pale switch(s).

3. Draw symbol for receptacle.

4. Draw symbol for switch.

XI. Identify Fuses and Circuit Breakers

1. Identify 15 amp fuse by numbers on fuse.

2. Identify 15 amp fuse by window shape.

3. Identify 20 amp fuse by number of fuse.

4. Identify 20 amp fuse by window shape.

5. Identify 15 amp circuit breaker.

6. Identify blown fuse.

XII. Identify Conductors

1. Identify ungrounded conductors (black, red, blue, except white and green)

2. Identify neutral conductors (white or gray).

3. Identify ground conductor (green or bare).

XIII. Incandescent and fluorescent lights.

1. Identify 100 watt incandescent lamp.

2. Identify 25 watt incandescent lamp.

3. Select 4' fluorescent tube.

4. Select 2' fluorescent tube.

XIV. Knots (Project)

1. Make an underwriters knot.

2. Cut two 20" pieces of wire.

3. Start braiding wire 6" from bottom.

4. End braid 12" from top.

5. Make loop in one wire.

6. Pass No. 2 wire through loop.

7. Pass No. 2 wire around behind No. 1 wire.
8. Pull No. 2 wire down through loop in No. 1 wire.
9. Pull No. 2 wire tight.

XV. Wiring Door Bell (Project)

1. Skin 6" of Bell Cable.
2. Strip black and white wire with wire skinners.
3. Make eye on black and white wires with needle nose pliers.
4. Loosen two screws on Bell.
5. Place black wire on one screw, white wire on other screw in clockwise direction.
6. Close eyes on both wires.
7. Tighten both screws on Bell.

XVI. Identifying Screws

1. Identify a machine screw.
2. Identify a wood screw.
3. Identify a sheet metal screw.
4. Select 6/32 machine screw.
5. Select 8/32 machine screw.
6. Select 10/32 machine screw.

XVII. Installing Wood Screw (Project)

1. Select wood screw.
2. Mark location on which screw is to be driven.
3. Select proper size screw driver to fit screw slot.
4. Center punch wood with awl.
5. Start screw by hand.
6. Tighten screw down with driver.

XVIII. Install Switch Plate (Project)

1. Identify and select switch plate.
2. Remove switch plate and 6/32 screw from package.
3. Place switch plate over switch.
4. Line one hole up on plate and switch.
5. Install screw through plate hole to switch by hand.
6. Snug screw with driver.
7. Line up second hole on plate with switch.
8. Install second screw through plate by switch by hand.
9. Snug second screw.
10. Plum plate.
11. Tighten two screws.

TECHNICAL DRAFTING

Terminal Performance Objective

This unit was prepared as a suggested course of study for drafting and design technology. It is a framework around which the teacher may develop his own course of study. The tentative nature of the material should be kept in mind.

With suitable modification, the course can be adapted to meet the requirements of the various levels of teaching in design drafting. The time allotments would depend upon the extent of this modification.

In the development of this material, attention has been given to the objectives of a course or curriculum in which it might be used. Such a program would, of course, have the general objective of vocational education--that of preparing individuals for gainful employment, and the more specific objectives of technical education that of preparing for employment in a particular cluster of jobs involving certain technical competencies.

In the final analysis, objectives of a program of drafting and design technology are to prepare individuals to function in an employment situation which must be defined, for our purpose, in terms of activities.

I. In design technology, the technician is required to:

1. Design various devices such as:

    a) a section of a major component
    b) a complete minor functional system, i.e., machinery for aircraft or missiles, or electrical and electronic test equipment

2. Work from:

    a) engineering design sketches and notes
    b) design directives
    c) other preliminary data

3. Handle all aspects of design in a specialized field.

4. Work as:

    a) tool, gage, or die designers
    b) machine designers
    c) mechanical draftsman
    d) engineering drawing checkers
    e) a technician in related occupations

5. Investigate pertinent design factors such as ease of manufacture, availability of materials and equipment, interchangeability, replaceability, strength-weight efficiency, customer and contractual requirements, cost, and design trends.

6. Draw preliminary sketches, design layouts, and detailed drawings.

This unit has been planned and organized to provide a student with opportunities to develop:

1. The necessary skills, vocabulary, and knowledge for entry into technological occupations.

2. An awareness of the need for accuracy, neatness, and efficiency.

3. A familiarity with the materials of industry.

4. The ability to work with other people in an industrial situation.

5. An awareness of the importance of further study after entry into an industrial occupation.

RESOURCES

TOOLS

compass set
triangular scales in inches and metric
set of triangles (90 degree and 60-30 degree)
drafting pencil and H, 2H, 3H, and 4H leads
eraser and erasing shield
pencil pointer
desk brush
circle template
drafting machine

BOOK

French & Vierck. Engineering Drawing.

BASIC DRAFTING

Terminal Performance Objective

After completing prescribed learning activities, the student when provided with necessary equipment and supplies will be able to draw simple mechanical features to the satisfaction of an engineering design graphics or architectural drafting instructor.

I. Basic Drawing Skills

1. Describe basic views and their location.
2. Demonstrate knowledge of size description, dimensions and their arrangement.
3. Draw letters and numbers.
4. Make notes and specifications.
5. Draw angles.
6. Draw chamfers.
7. Complete missing line drawings.
8. Complete missing view drawings.

II. Development of Plates

1. Complete plates of:
    - a) a point in space
    - b) a line in space
    - c) a plane in space
    - d) the intersection of two non-parallel lines in space
    - e) a point and a line in a plane from accompanying views
    - f) a line indicating the bearing and the slope in degrees
2. Complete a plate and determine the distance from:
    - a) a point to a line
    - b) line to a point

3. Draw a plate showing:

   a) line parallel to plane
   b) location of the line of intersection of two plates
   c) the angles in degrees between two intersecting lines and a plane
   d) the angles in degrees between two intersecting lines.
   e) line perpendicular to a plane through a line

4. Draw a plate showing the location of the piercing line in a

   a) plane
   b) sphere
   c) cylinder
   d) cone

III. Architectural Drawing Skills

1. Draw a simple floor plan.

2. Draw a plot plan.

3. Draw an elevation.

4. Draw a plan depicting structural details.

5. Identify electrical components and draw simple electrical diagrams.

6. Identify water systems and draw simple piping diagrams.

7. Draw wiring and schematic diagrams of various electrical circuits.

8. Draw a freehand sketch of a piping drawing which depicts
   a) pipe location
   b) type and position of various units in the pipeline
   c) sizes and description of all parts used in the piping system

9. Draw a piping drawing from a freehand sketch.

IV. Mechanical Drawing Skills

1. Draw a simple cam profile.

2. Identify and draw gears.

3. Identify and draw simple fixtures.

4. Identify and draw simple dies.
5. Identify and draw simple castings.
6. Identify and draw simple standard parts.
7. Draw a dam profile when given a diagram.
8. Layout partial portions of gears and identify:
   a) shapes of gears
   b) gear nomenclature
9. Layout partial tooth portion of gear and identify all parts.
10. Make a detailed drawing of a pair of bevel gears.
11. Layout and detail several jigs.
12. Prepare a bill of material.
13. Layout and detail several fixtures.
14. Determine and adjust toolsets.
15. Draw clamping mechanism and design the necessary lubrication system in a fixture.
16. Layout and detail different types of common dies.
17. Copy a casting drawing.
18. Construct a simple casting drawing and show all required details.
19. Draw schematics of simplified symbols of various standard parts and indicate specifications.
20. Construct a plate showing semi-conventional thread representations of nuts, bolts and screws.

METAL WORKING

Metal working is an ancient trade that is becoming more important every year. Many items once made from wood are now fabricated from metal. Many of the skills learned in metal working can also be used in other occupations. This manual focuses on metal working skills which have everyday applications.

RESOURCES

TOOLS

drill press
bar folder
box and pan brake

FILM

Source: General Motors

ABC of Hand Tools

FILMSTRIPS & CASSETTES

Source: ACI Films Inc., 35th St. New York, N.Y. 10036.

Introducing the Box & Pan Brake
Making a Box

TEXTS

Boyd, T. G. *Metalworking*. Goodheart-Wilcox.

Ruley, M. J. *Projects in General Metals*. McKnight Publishing Co.

PROJECTS

Planter for flowers, tool tray, scoop, jar opener, spice rack, dust pan.

METAL WORKING

Terminal Performance Objective

After completing prescribed learning activities, the student will be able to complete a metal working project involving a minimum of four metal working operations. Adherence to standard construction procedures as well as the quality of the completed project will be evaluated by the course instructor.

I. General Safety for Metal Working

1. Notify the instructor immediately when injured in the shop or laboratory, no matter how slight the injury.
2. Have proper first aid applied to minor injuries. Consult a physician for proper attention to severe cuts, bruises, burns, or other injuries.
3. Wear safety goggles or a face shield of an approved type at all times in shop or laboratory.
4. Remove oil or grease from the floor before starting to work.
5. Place oil rags and other flammable wiping materials in the proper containers.
6. Keep aisles and pathways clear of excess stock, remnants or waste. Store long metal bars in the proper storage area.
7. Return all tools or machine accessories to the proper storage areas after use.
8. Operate machines or equipment only when authorized.
9. Avoid needless shouting, whistling, boisterousness, or play when in the shop or laboratory. Give undivided attention to the work at hand.
10. Never touch metal which you suspect is hot. If in doubt, touch the metal with the moistened rag to determine whether it is hot.
11. Approach someone who is operating a machine cautiously. Wait until he has finished a particular operation or process before attracting his attention.

12. Avoid touching moving parts of machinery.

13. Avoid operating a machine until the cutting tools and the workpiece are mounted securely.

14. Avoid leaning on a machine which is being operated.

15. Be sure that all of the safety devices with which a machine is equipped are in the proper location and order before using the machine.

16. Never leave a machine while it is running or in motion.

17. Stop machine before oiling, cleaning, or making adjustments on it.

18. Use a brush or a stick of wood to remove metal chips from machine.

19. Refrain from stopping a machine such as a drill press spindle or a lathe spindle with one's hands.

20. Avoid touching moving belts or pulleys.

21. Inspect the moving parts of a machine before changing a V-belt.

22. Before starting a machine, clear it of excess tools, oil, or waste.

23. Request help when it is necessary to life a heavy machine accessory or other heavy object.

24. Avoid working in restricted areas which are marked off as safety zones.

25. Take notice if everyone is wearing approved safety goggles or a safety shield if permitted (by instructor) to blow metal chips from a machine with compressed air.

26. Identify the location of the nearest fire extinguisher and demonstrate its operation.

27. Always place flammable materials, such as paint thinners, lacquers, and solvents, in a metal cabinet away from open flames.

II. Safety with Hand Tools

1. Use the right tool for the job to be performed.
2. See that tools and hands are clean and free of grease or oil.
3. Check the sharpness of cutting tools prior to their use. (Dull tools cause accidents because of the greater forces required to use them.)
4. Carry sharp edged tools with their points and cutting edges oriented downward.
5. Properly dress or repair heads of cold chisels and punches.
6. When using a chisel, chip in a direction which will prevent flying chips from striking others.
7. Use the correct type of wrench for the job at hand and use wrench properly.
8. When using a file, equip it with a snug-fitting handle.
9. When passing tools to others, present them to the receiver with the handle first.
10. Always report damaged tools to the instructor. (Damaged tools can cause injuries.)

III. Hand Tools - Metal Working Hand Tools

1. Machinist's hammer (ball peen hammer)
2. Soft hammers and mallets.
3. Slip-joint plier.
4. Side-cutting plier.
5. Round-nose plier.
6. Regular screw driver.
7. Phillips screw driver.
8. Monkey wrench.
9. Adjustable-end wrench.

10. Pipe wrench.

11. Vise-grip wrench.

12. Open-end wrench.

13. Box wrench.

14. Socket wrench.

15. Spanner wrench.

16. Scriber.

17. Divider.

18. Prick punch.

19. Center punch.

20. Caliper:

    a) inside
    b) outside

21. Steel rule.

22. Combination square.

23. Square gauge.

IV. Sheet Metalwork Hand Tools

1. Identify, select, and use correctly:

    a) scriber
    b) scratch awl
    c) wing divider
    d) setting hammer
    e) riveting hammer
    f) mallet
    g) hollow punch
    h) solid punch
    i) hand punch
    j) flat nose plier
    k) hand hacksaw
    l) cold chisel
    m) snip
    n) double cutting shear
    o) bench shear
    p) squaring shear

V. Lay out

1. Clean and polish a metal surface.

2. Color metal for marking.

    a) chalk
    b) layout dye or copper sulfate solution

3. Draw a straight line using a scriber and a:

    a) steel rule
    b) square OR
    c) bevel protractor

4. Prick punch a line with marks 1/16" apart.

5. Scribe a circle using a divider.

6. Divide a line into equal segments using a divider.

7. Measure a distance using dividers.

8. Locate the center of a circle using dividers.

9. Locate the center on the end of a round bar using a hermaphrodite caliper.

10. Mark a metal surface using a template.

11. Lay out parallel lines using dividers.

12. Lay out a perpendicular line through a point on a line.

VI. Hand Sawing

1. Place material to be cut in a vise with the part to be sawed near the vise.

2. Position body correctly for sawing.

3. Hold hacksaw correctly:

    a) one hand on handle
    b) one hand on other end of frame

4. Begin cut with backward stroke, press down on forward stroke, and lift a little on return stroke.

5. Tighten blade periodically to compensate for stretch derived from warmth.

6. Make long, slow, steady strokes (about 40 cutting strokes per minute.)

7. Refrain from inserting new blade in old cut. (This ruins the sides of the teeth.)

8. Demonstrate how to saw thin material.

9. Demonstrate how to saw with blade at right angles to the frame.

VII. Chisels and Chipping

1. Identify cold chisels and state their use.

    a) flat chisel - cutting sheet metal, bars and rivets. Most commonly used chisel.
    b) cape chisel - cutting narrow grooves
    c) diamond point chisel - cutting V-shaped grooves and square corners
    d) round nose chisel - chipping round corners and grooves

2. Explain the dangers of allowing the head of a chisel to become mushroomed.

3. Explain when to sharpen head of chisel on grinding wheel.

4. Wear goggles whenever chiseling.

5. Chip a piece of stock using proper posture, position of chisel, swing of hammer, tension on chisel.

6. Shear a piece of stock using flat chisel and vise jaw.

7. Cut a rod and/or rivet using flat cold chisel.

VIII. Filing

1. Identify the three common cuts of files:

    a) single-cut
    b) double-cut
    c) rasp-cut (used for wood)

2. Place work for filing in a vise with part to be worked near the vise jaws.

3. Position body properly for filing.

4. State the rule for cutting.

   "The cutting tool must be harder than the material to be cut"

5. Grasp handle of file, place thumb and fingers on end of file.

6. Place point of file on work, cut by pressing down on forward stroke, and lifting a little on return stroke to prevent dulling the file.

7. Avoid short jerky motions (cross-filing).

8. Press hard with slow deliberate strokes.

9. Test flat surfaces with straightedge.

10. Clean debris (pins) from file by brushing it with a file card.

11. Remove oil from a file using chalk and a file brush.

IX. Drills and Drilling

1. Identify:

   a) twist drill

2. Identify drill shank.

   a) straight
   b) tapered

3. Identify various sizes of drills using drill gauge

   a) gauge numbers - larger the number, the smaller the drill
   b) fractional drills

4. Identify and use the various drilling machines:

   a) hand drill
   b) portable electric drill
   c) handfeed drill press

5. Identify and set up accessories:

   a) drill press table
   b) slots

c) strap clamps
d) T-slot bolt
e) C-clamp
f) parallel clamp
g) drill vise
h) drill jig

6. State principle for selecting drill speed.

7. Put drill in drill chuck.

8. Tighten drill with chuck key.

9. Pick-punch marks for drilling.

10. Enlarge prick-punch mark with a center punch.

11. Place point of drill, while it is turning over center-punch mark and enlarge it a little.

12. Raise the drill to see if the circle made by the drill is concentric with the proof circle.

13. Draw the drill if circle is eccentric (off center).

14. Exercise caution when drilling a through hole. (Hold back on feed as the drill point begins to break through the underside of the work).

15. Drill holes to depth using the feed stop.

16. Use cutting fluids whenever appropriate.

17. Remove drill from chuck and replace in proper storage area.

X. Fasteners

1. Identify common bolts, screws, and nuts by:

a) name
b) function

XI. Transfer Paper and Metal Patterns onto Metal

1. Cut out the outline of the paper pattern with a pair of scissors (use any pattern).

2. Place the sheet of metal to be used on the wood part of the bench. If the metal rests on the bench plate, the point of the prick punch will become dull if punched on the iron surface.

3. Place the paper pattern on the metal in the proper position to avoid waste.

4. Place metal weights on the paper pattern to keep it from creeping, as shown. C-clamps should not be used with a paper pattern.

5. Make slight identations with a sharp prick punch on all bend lines.

6. With a hard, sharp-pointed pencil scribe the outline of the pattern on the metal.

7. Remove the weights and cut out the pattern using the proper snips.

XII. Transfer a Metal or Master Pattern onto Metal

1. Place the metal on the bench in the same manner as in previous operations.

2. Place the metal pattern on the metal in the proper position.

3. Secure the pattern with weights or vise-clamp wrench (vise-grip) to keep it from creeping.

4. Scribe on the metal the outline of the pattern with a sharp scratch awl.

5. Make slight identations with a sharp prick punch on all bend lines.

6. Remove the weights or vise-clamp wrench and cut out the outline using the proper hand snips.

7. Check the pattern before forming to shape.

XIII. Square a Piece of Metal

1. Place the sheet to be squared between the cutting blades with one side against the left-side gauge.

2. Extend the edge to be trimmed beyond the lower cutting blade. This distance should never be less than the thickness of the sheet.

3. Pull the hold-down handle to clamp the sheet in place.

4. Keeping both hands on the metal, step on the foot treadle to cut the piece of metal. Be sure the fingers are away from the cutting blades.
5. Release the foot treadle gradually, keeping the foot on the treadle until it is back in place.
6. Release the hold-down handle and remove the metal.
7. Place the edge that has just been trimmed against the left side gauge, again extending the sheet about 1/8" beyond the lower cutting blade, and repeat the cutting operation.
8. Set the front gauge to required size.
9. Place the squared edges of the metal against the front and left gauge.
10. Hold the metal in place with your hands and repeat the cutting operation.
11. Reset the gauge to the size desired.
12. Cut the remaining edge.

XIV. Use the Hollow Punch

1. Select the size of the hollow punch to correspond with the diameter of the desired hole.
2. Mark the center of the hole lightly with a prick punch.
3. With a compass, scribe a circle which has a diameter slightly larger than that of the hole of the punch.
4. Place the metal flat on a lead cake.
5. Hold the punch directly in the center of the scribed circle.
6. Strike the punch a medium blow using a ball peen hammer.
7. Raise the punch to check whether or not the punch is evenly centered. Return the punch to the impression and continue striking sharp blows until the metal is punched.
8. With the burr side up, flatten smooth with a mallet.

XV. Drill in Sheet Metal

1. Make sure the holes are properly located and center punched.

2. Check the drill size. If the number is not clear, use a drill gauge (device with holes corresponding to drill sizes)

3. Use high speed drills when cutting common steels.

   Sheet metal drills are sharpened with a flatter point so as not to grab when coming through back side.

4. Identify the type of material which is being drilled.

5. Ascertain if the drill is properly centered in the chuck by turning on the power for an instant.

6. Ascertain if the work is mounted properly in a holding device such as a vise or C-clamp.

7. Adjust the table so that the point of the drill is slightly above the work. Use the adjustable stop to secure the proper depth for drilling. Use a wood backing and be sure the drill does not bore into the table.

8. To reduce friction, use lubricants such as lard, or soluble oil and water for low carbon steels.

9. Check the centering of the drill after the point has just started in the metal; relocate the hole if necessary.

10. Feed the drill with a light, even pressure to prevent bending the drill.

11. Remove and return the drill to its proper place when finished.

XVI. Make a Riveted Seam

1. Place together the two pieces of metal with burrs of the holes turned up and the lap on the under side.

2. Insert the rivet in the end hole; keep the rivet head on a solid foundation. Place the deep hole of the rivet set over the rivet. Strike the set a sharp blow with a riveting hammer.

3. Remove the rivet set. Strike the rivet two or three blows with the riveting hammer. This should flatten the rivet sufficiently to make it fit tightly in the hole as previously explained.

4. Place the identation of the rivet set over the partly flattened rivet and form the head.

5. Insert the rivet in the hole at the opposite end and rivet in the same manner as just described.

6. Beginning with the nearest center hole, rivet alternately in each direction.

ADVANCED METAL WORKING

Terminal Performance Objective

After completing prescribed learning activities, the student will be able to complete a project involving at least seven metal working operations. Adherence to standard construction procedures as well as the quality of the completed project will be evaluated by the instructor.

I. Hacksaw

1. Identify hacksaw and its parts.
    - a) frame
    - b) handle
    - c) tightening screw
    - d) prongs
    - e) wing nut
    - f) blade
        - 1) flexible
        - 2) hard
        - 3) 8", 10", and 12"
2. Count the number of teeth per inch and add one to determine points of blade.
3. Determine how many teeth (points) are needed for cutting:
    - a) copper, aluminium, things over 1" in thickness equal 14 teeth
    - b) iron, rod, tool steel, and material 1/4" to 1" equal 18 teeth
    - c) iron pipe, conduits, and material 1/16" to 1/14" equal 24 teeth
    - d) materials up to 1/16" thickness equal 32 teeth
4. Place new blade in hacksaw frame so that teeth point away from handle.

II. Files

1. Identify a file and its parts:
    - a) tang
    - b) point
    - c) heel
    - d) safe edge
    - e) file handle
        - 1) ferrule

3. Identify some common file shapes.
    - a) mill
    - b) flat
    - c) hand
    - d) square
    - e) round (rat tail)
    - f) half-round
    - g) three square
4. Identify various spacings between file teeth and explain the purpose for varying the spacing.
    - a) rough
    - b) coarse
    - c) bastard
    - d) second-cut
    - e) smooth
    - f) dead smooth

III. Drills

1. Identify drill press accessories:
    - a) drill sleeve OR
    - b) drill press spindle
    - c) drill chuck
    - d) chuck key
    - e) hand crank
    - f) table
    - g) column
    - h) table clamp
    - i) spindle
    - j) feed handle

IV. Fasteners

1. Identify types of threads.
2. Identify bolts, nuts, and screws by:
    - a) kind of finish
    - b) diameter (size)
    - c) shape of head
    - d) shape of point (set screws only)
3. Identify various bolts, screws, nuts, and washers
    - a) carriage bolts
    - b) machine bolts
    - c) tap bolts
    - d) stove bolts
    - e) cap screws
    - f) machine screws
    - g) wood screws
    - h) machine-screw nuts
    - i) lock nuts
    - j) wing nuts
    - k) lock washers
    - l) flat washers

V. Bending Sheet Metal

1. Identify a:
    - a) hem
    - b) seam
    - c) bar folder
2. Bend sheet metal in a vise.
3. Bend sheet metal on a stake.
4. Make a groove with a hand groover.
5. Bend metal with a bar folder.

VI. Bar Folder

1. Set the gauge by means of the gauge adjusting screw to the width desired.
2. Tighten the lock screw to keep the gauge from slipping.
3. Loosen the wedge lock nut in the rear of the machine.
4. Adjust the wedge screw to get the desired fold. For this particular operation the fold should be sharp. Tighten the wedge lock nut.
5. Set the stop of the adjustable collar to the maximum angle.
6. Adjust the screw in the shoe on each side of the folder for the thickness of the metal. Be sure both sides of the machine are set identically.
7. Insert the metal into place between the blade and the jaw, resting it against the gauge fingers located under the blade.
8. With the left hand holding the metal in place, pull the handle forward as far as it will go, making the bend.
9. Return the handle to its former position and remove the sheet of metal. (Do not allow the handle to slam back).
10. Place the sheet of metal back on the beveled part of the blade and as close to the wing as possible in the position.

11. Hold the metal with the left hand and pull the operating handle briskly with the right hand, flattening the seam.

12. Adjust the depth gauge for required size and position the wing for the desired fold sharpness.

13. Set the metal in place resting it against the gauge fingers.

14. Hold metal with one hand, pull the handle with the other as far forward as it will go. Return handle to original position.

15. Place the folded section on the beveled section of the blade, as close to the wing as possible. Flatten the fold by pulling the handle forward rapidly.

16. Bend metal with a brake.

17. Bend metal with a forming machine.

VII. Box and Pan Brake

1. Identify box and pan brake.
2. Use clamp bar lever to hold metal.
3. Adjust clamping pressure for thickness of metal being used.
4. Clamp metal in brake on marked line.
5. Use brake to bend metal to given angle.
6. Release clamping pressure.
7. Remove fingers from brake to change length of bending line.
8. Use breke to bend all four sides of a box.
9. Use brake to form a single hem.
10. Use back gauge to bend several pieces the same size.

GAS ENGINE OPERATION

This course of study is designed to provide students with sufficient knowledge and skills to safely start, stop, and operate small gas engines such as those used to drive lawn mowers, snowblowers, rototillers and snowmobiles. It also introduces the student to daily maintenance, tune-ups, trouble shooting, and adjustments of small engines.

RESOURCES

BOOKS/PAMPHLETS

Lawn Boy Mechanics Handook. Outboard Marine Corp., Gakburg, Illinois.

Repair Instruction IV. Briggs and Stratton, Milwaukee, Wisconsin 53201.

Small Gas Engine Repair. U.S. Dept. of Health, Education and Welfare, United States Printing Office, Division of Public Documents, Washington, D.C. 20402

FILMS

Source: Preventative Maintenance, Briggs and Stratton, Milwaukee, Wisconsin 53201.

Stop-Start-Store (35mm)

Tools needed to complete unit:

1. Spark tester
2. Thickness gauge
3. #1-#2 Flat screw driver
4. #1-#2 Phillips screwdriver
5. Fly wheel holder
6. Start clutch wrench
7. Fly wheel puller
8. Combination box and open wrench set 5/16 - 3/4
9. 3/8" Drive socket set
10. Allen wrench set
11. Pliers - needle nose
    diagonal cutting
    adjustable plier
12. Brass hammer
13. Medium ball-peen hammer
14. 1-3/8 drive spark plug socket 13/16"
15. Point file
16. 1 6" adjustable wrench

GAS ENGINE OPERATION

Terminal Performance Objective

After completing prescribed learning activities, the student will demonstrate the correct procedures for operating a power lawn mower. Performance will conform to instructions given in a standard operator's manual.

OPERATING A POWER LAWN MOWER

Introductory Level

I. Safety Rules

1. Review operating instructions before operating any power machinery.
2. Review owner's manual with instructor, salesman, or knowledgeable person.
3. Demonstrate the function and the use of all of controls previous to running motor.
4. Demonstrate how to stop engine quickly.
5. Demonstrate how to quickly put machine in "out of drive" position.
6. Give safety rules and operating instructions to another student.
7. Avoid the operation of machinery in bad weather conditions.
8. Make adjustments to operating parts only when machine is stopped and spark plug disconnected.
9. Maintain and use all safety guards and shields.
10. Clear path of all sticks, stones, wires, or other dangerous debris before operating high speed machinery.

11. Avoid directing discharge chute towards bystanders.

12. Operator should keep away from discharge chute.

13. Wear proper clothing and footwear when using power machinery.

14. Check all nuts, bolts, and fasteners before using power machines - especially blade nut on mowers.

15. Keep body extremities away from moving parts.

16. Avoid striking foreign objects.

17. Exercise caution on slopes and other dangerous terrain.

18. Stop the engine before:

    a) pushing mowers across walks, drives, or roads
    b) removing obstacles from lawn
    c) making adjustments or repairs other than carburetor adjustments
    d) before resetting the cutting height adjustments

19. Remove spark plug before:

    a) putting hands into blade area for cleaning
    b) rotating blade with hand or foot

20. Avoid adding fuel to running or hot engine or in the poximity of someone who is smoking.

21. Store and transport gasoline safely.

22. Avoid running engine inside where exhaust fumes can collect.

23. Keep alert when operating power machinery.

II. Prepare Engine to Start (4 cycle stroke)

1. Determine type of engine:

    a) identify different types of engines
    b) recognize certain characteristics for positive identification
    c) make positive identification

2. Select proper oil.

3. Remove oil filler plug and fill to proper level:

   a) identify oil filler plug
   b) remove oil filler plug
   c) recognize need for cleanliness
   d) use quart measure and clean funnel to fill
   e) recognize recommended oil level

4. Replace oil filler plug.

   a) identify oil filler plug and clean it
   b) start plug threads straight
   c) turn clockwise until hand tight

5. Remove gas cap and fill fuel tank.

   a) locate gas tank and cap
   b) identify type of fuel to use
   c) fill to recommended level

6. Check choke lever for proper action.

   a) identify choke lever
   b) observe choke action by moving choke lever
   c) determine if choke action is sufficient

7. Check throttle lever for proper action.

   a) identify throttle lever and locate on engine
   b) observe throttle action by movement of lever

8. Check shut off switch.

   a) identify and check switch
   b) observe shut off switch action by moving lever

9. Put choke lever in choke position.

   a) locate choke lever
   b) determine choke position on carburetor
   c) move lever to choke position

10. Check for fuel shut off valve.

   a) identify fuel shut off valve
   b) determine "off" and "on" position
   c) turn valve to "open" or "on" position

11. Pull starter rope to start engine.

   a) identify starter and locate pull handle

   b) check area for arm clearance
   c) grip handle firmly, pull quickly and evenly; repeat until engine starts
   d) put choke in "off" position
   e) adjust throttle lever to desired speed

12. Stop engine.

   a) identify shut off switch
   b) move shut off switch to contact position
   c) hold shut off switch until engine stops

Level II

I. Daily Maintenance Practices

1. Fuel - fill the fuel tank, without spilling the fuel.

2. Oil - check the oil level, add oil as required, or change oil when necessary.

3. Transmission case - check the lubricant level, adding or changing the lubricant as necessary, without spilling.

4. Oil filter - clean, check the oil level, and change when necessary. Use solvent for cleaning filters.

5. Chains - apply oil to chains at regular intervals. Check the condition of the links.

6. Belt condition - check belts for excessive wear and for proper tension.

7. Moving parts - grease all moving parts according to service manual.

8. Cutting surfaces - clean and check cutting surfaces of plows, cultivator tines and mowers for sharpness. Cover cutting surfaces with used oil or grease if the machine is to sit out in the weather or not be used for a period of time.

9. Adjustment - check machine to be sure that all operating parts are in correct adjustment.

10. Bolts - inspect the machine for missing and/or loose bolts. Do not tighten excessively.

11. Damaged or broken parts - determine if any parts have been damaged to the extent that machine operation will be impaired.

12. Machine cleanliness - clean off accumulated dust and dirt regularly.

II. Preventive Maintenance

1. Air cleaner

   a) service air cleaner after 10 hours of operation
   b) remove element (except paper type) and wash in cleaning solvent
   c) wring cleaner out and apply 10-15 drops of oil
   d) distribute oil properly by squeezing cleaner several times
   e) check element for puckering; change if needed
   f) reinstall element in same position as removed

2. Carbon

   a) identify carbon in muffler and in exhaust ports.
   b) remove muffler
   c) pull starter rope until piston covers the ports
   d) use 3/8" diameter dowel in ports to remove carbon deposits
   e) remove carbon deposits from muffler
   f) adjust fuel mixture to prevent future carbon buildup

3. Fuel recommendations.

   a) identify and use specified gasoline, regular octane fuel
   b) mix correct amount of oil to gasoline when specified. Outboard motor oil or 30W SAE oil
   c) always use clean, fresh fuel mixture

4. Blade care.

   a) sharpen blade with file and sharpening stone
   b) identify an improperly balanced blade by excessive vibration and loss of engine power
   c) correct minor inbalance by grinding blade
   d) identify causes for replacing blade
   e) replace blade when needed

5. Storing engine.
    - a) drain fuel from:
        - 1) fuel tank
        - 2) fuel line
        - 3) carburetor
    - b) pour 1/2 tablespoon of engine oil into cylinder through spark plug hole
    - c) turn flywheel slowly to distribute the oil on cylinder walls
    - d) replace the spark plug
    - e) clean all parts of machine
    - f) store engine in dry place

6. Remove engine from storage.
    - a) clean exterior of engine if needed
    - b) remove spark plug
    - c) spin the flywheel to check for free movement of piston and valves
    - d) clean, gap, and install spark plug
    - e) replace spark plug if needed
    - f) tighten all screws and nuts
    - g) make visual inspection of engine exterior

III Trouble-shooting

Locate source of engine trouble when:

1. Engine fails to start.
    - a) fuel supply
    - b) power head
    - c) ignition
    - d) carburetion

2. Engine quits.
    - a) fuel supply
    - b) power head
    - c) ignition
    - d) carburetion

3. Engine runs alternately fast and slow.
    - a) governor
    - b) carburetion

4. Engine runs erratically, misses frequently.
    - a) fuel supply

   b) carburetion
   c) ignition

5. Engine runs evenly, but lacks power.

   a) carburetion
   b) power head
   c) governor
   d) ignition

6. Engine races or runs wide-open all the time.

   a) governor

7. Engine lacks power and smokes excessively.

   a) improper fuel mixture
   b) carburetion

Level III

I. Minor Tune-Up Techniques Relating to Ignition System

1. Clean spark plugs.
2. Set gap.
3. Install plugs.
4. State purpose of fuel filter.
5. Identify type and size filter needed.
6. Service filter.
7. State purpose of air cleaner.
8. Identify type and size of air cleaner.
9. Clean air cleaner.
10. Adjust choke.
11. Adjust throttle.

II. Fuel Trouble-shooting

1. Check for fuel in tank.

2. Check fuel shut-off valve.

3. Check for water in fuel.

4. Check for improper fuel mixture.

    a) determine if fuel mixture is too rich
    b) determine if fuel mixture is too lean

5. Check for old fuel in tank which forms gum.

6. Determine if vent hole in fuel tank cap is plugged.

7. Determine if fuel line or strainer is clogged.

Level IV

I. Condenser

1. State purpose of condenser.

2. Test the condenser.

3. Install the condenser.

II. Coil

1. State purpose of magnetic coil.

2. Test the coil.

3. Install and adjust air gap according to manual.

III. Governor

1. State purpose of governor.

2. Identify type of governor. Mechanical or pneumatic.

3. Adjust according to manual.

IV. Compression

1. State methods of checking.

2. Check dry compression with compression gauge.

3. Check wet compression with compression gauge.

V. Carburetor

1. State types - gloat and diaphragm.
2. Adjust float (where applicable).

VI. Adjust Points

1. Identify parts known as points.
2. Remove the shroud.
3. Remove rachet drive.
4. Remove flywheel.
5. Remove points cover.
6. Remove points and condenser.
7. Replace points and condenser with the proper gap according to manual.
8. Assemble the engine in proper sequence.
9. Check engine for spark.
10. "Run up" the engine.
11. "Shut down" the engine and clean up.

VII. Adjust Magneto Air Gap

1. Locate magneto area.
2. Remove shroud to get at magneto.
3. Identify magneto.
4. Identify feeler gauge.
5. Locate proper gap by use of manuals.
6. Select correct measurement on feeler gauge.
7. Adjust magneto to specifications.

8. Reassemble engine.
9. Check for a spark.
10. "Run up" the engine.
11. "Shut down" engine and clean up.

VIII. Carburetor Trouble-shooting

1. Determine if choke is improperly adjusted (except "D" engines).
2. Determine if float is heavy (oil soaked).
3. Determine if dirt is between float needle and seat.
4. Determine if float level is set too high.
5. Determine if needle valve or valve seat is damaged.
6. Determine if dirt prevents reed valve from closing.
7. Determine if reed in reed valve is damaged.
8. Determine if water or foreign matter is clogging passages, jets, and screen.
9. Determine if float valve is corroded or gummed so that valve does not open properly.
10. Determine if float level is set too low.
11. Determine if float hinge is dirty or corroded.
12. Determine if air filter is dirty.
13. Determine if jets, needle valves, fuel lines, and screens are dirty.
14. Determine if there is a loose connection or defective gasket between carburetor reed valve and crank case.
15. Check for faulty butterfly valve or choke.
16. Check for dirt which may prevent reed valve from closing.

17. Check for dirty air filter.

18. Check for broken or damaged reed valve.

IX. Governor Trouble-shooting

1. Determine if governor has come apart.

2. Check for binding of governor assembly.

3. Check for worn or damaged governor rod.

4. Check for weak governor spring.

5. Check for excessive wear of governor wear block.

6. Determine if governor needs adjusting by checking under loaded or working condition.

X. Ignition Trouble-shooting

1. Check for excessive oil in fuel by smoking or insufficient oil.

2. Determine if breaker points are dirty or out of adjustment.

3. Check for weak condenser.

4. Check for incorrect plug.

5. Check for careless installation of plug.

6. Check center electrode strain when regapping plug.

XI. Magneto Trouble-shooting

1. Determine if points are pitted, dirty, or out of adjustment.

2. Check for weak condenser.

3. Determine if permanent magnet is weak.

4. Check for loose or broken connections and for worn insulation on wire.

5. Check for loose or corroded ground connection on condenser.

6. Check for broken wire or loose connection and bare wire which is shorting the motor.

7. Check for broken down, damp, or shorted coil.

XII. Power Head Trouble-shooting

1. Determine if piston rings are carboned, worn, broken or fitted too tightly.
2. Check for warped, galled or burned piston.
3. Check for poor lubrication, determine if bearings are not properly lubricated.
4. Check for bent, twisted or broken connecting rod.
5. Determine if crankshaft is sprung.
6. Determine if the block is sprung or misaligned.
7. Determine if piston rings are carboned, worn, broken, or stuck in groove resulting in blow-by.
8. Check for worn piston ring grooves which can result in blow-by.
9. Check for worn cylinder.
10. Check for loose cylinder or loose or defective gasket.
11. Check for excessive carbon in cylinder causing detonation.
12. Check for worn piston which can slap against cylinder.
13. Check for twisted or worn connecting rod.
14. Check for worn wrist pin.
15. Check for corrosion in cylinder.

XIII. Mower Trouble-shooting

1. Check for bent blade.
2. Check for grass lodged between blade and housing.
3. Check for proper balance of blade.
4. Check for no lubrication.
5. Check for loose bolts.

FURNITURE RESTORATION

This unit is a suggested outline designed for use by junior high students and above. It is designed for use in a laboratory setting, and it emphasizes proper furniture restoration methods that can later be incorporated into a more advanced furniture restoration course of study. Based on six hours per week, the unit could extend from four to eight weeks.

RESOURCES

TEXT

Grotz, G. The Furniture Doctor. Doubleday Book

Furniture Finishing & Refinishing. Doubleday, paperback, $1.95.

PUBLICATIONS

Better Homes and Gardens Guide to Painting, Finishing and Redecorating. $.65.

Furniture Restoration, Available at Extension Service, Morrill Hall, University of Vermont.

FILMS

Source: From the Industrial Aats Series, Prod. - YAF Dist. MGHT.

Wood Finishing H-C $3.80, 16 min., Black & White

Source: Greystone Films Inc., Box 303 Kingsbridge Station, Riverdale, New York 10463.

Group I:		Group II:	
	Bleaching, Stining		Repairing Wood Surfaces
	Hand Sanding		Sanding by Machine
	Shellac Finish		Varnish Finish
	Penetrating Finish		Special Finishes & Paint

FURNITURE RESTORATION

Terminal Performance Objective

After completing prescribed learning activities, the student will be able to restore a piece of furniture which requires stripping, sanding, and refinishing. The completed project will be evaluated by the course instructor.

I. Safety Considerations

1. Avoid can drips. With can held securely, use a nail or scratch awl to punch four or five holes around groove of can.
2. Re-seal can. Holes in groove will not prevent tight seal as lid seals along the sides. With rag or paper towel over the lid to avoid splatters, tap lid securely back in place with mallet or hammer.
3. Store all paint finishes and other flammable materials in a metal cabinet away from heat.
4. Do not smoke in vicinity of flammable items. Replace caps immediately after pouring finishing liquids.
5. Place rags and papers in metal covered cans after they have been used in the finishing process.

II. Remove Paint

1. Scrape off loose paint using putty knife or scraper.
2. Use stiff steel bristle brush to feather edges.
3. On fussy work, sand chip the edges to a fine feathered edge.
4. Brush or wipe off dusty residue.
5. Use metal scraper or sharp edge of broken glass - work with the grain to remove paint.
6. On simple turning, use strips of sandpaper in shoeshine motion. Final sanding should be with the grain.

7. Old hack saw blades may be used to clean up narrow grooves in corners.

III. Remove Finish from Stained and Shellacked or Tarnished Articles

1. Scrape the surface using steel scraper or glass.
2. Use paint and varnish remover in well-ventilated room.
3. Spread paint remover on surfaces evenly as if painting an object.
4. Where finish is soft (bubbled up) scrape it off.
5. Pry softened finish down to bare wood.
6. Run scraper down surface then wipe blade using old newsprint or old rags.
7. Use popsicle sticks to pry finish out of cracks and grooves.
8. Recoat surface with remover if necessary to get off all paint and varnish.
9. Clean with rags or steel wool dipped in denatured alcohol.
10. Sand with fine garnet paper where necessary.

IV. Apply Paint or Enamel

PAINT

1. Apply a coat of primer (well stirred).
2. Use a paint bucket (not filled to the top).
3. Dip brush about half way and put brush on the sides of the can. Do not wipe brush on edge or rim of bucket.
4. Flow in an even thin coat working toward the edges. Smooth out paint using tips of bristles.
5. Allow to dry overnight.

ENAMEL

6. Sand prime coat lightly using 4-0 sandpaper.

7. Apply coat of enamel to all surfaces.

8. Let dry overnight.

9. Apply second coat if needed.

V. Apply Shellac to New or Scraped Wood

1. Dilute shellac about two parts shellac to one part alcohol.

2. Flow on thin coat working from one end to the other. Avoid over-brushing.

3. Allow to dry (one hour or more).

4. Rub down lightly with 6-0 no-grit paper.

5. Wipe off dusty residue.

6. Apply second and successive coats rubbing down between coats.

VI. Apply Varnish Finish

(Use same procedure as with shellac, using proper solvent).

VII. Apply Polyurethane Finish

(Use same procedure as with shellac and varnish, except to use mineral spirits as solvent or reducer).

VIII. Apply Oil Stain to New Wood or Scraped and Sanded Articles

1. Moisten rag with boiled linseed oil and turpentine mixture and wipe over end grain segment or exposed end grain on turnings.

2. Use a brush or rag and apply an even coat of stain on large objects, stain one section at a time.

3. Allow the stain to stand for a few minutes or until enough penetration has taken place.

4. Wipe off evenly, using an ample supply of clean rags or cloths.

5. Allow to dry overnight before applying shellac, varnish, or urethane finish.

IX. Brush Care and Related Materials

1. Remove loose bristles from new brushes by running fingers through and tapping the brush against the hand.

2. Clean brushes used for shellac or alcohol stains in an alcohol solution, squeeze, and wash with a mild soap and water. Draw steel comb through dry brush and store in foil.

3. Pour manufacturer's recommended lacquer thinner into can and clean brushes used in lacquer projects. Use the same follow-up technique as used for shellac.

4. Pour a small amount of solvent into a metal container with mineral oil and clean brushes used in oil based finishes.

5. Put all brushes through a soap and clean water treatment and dry before storing.

6. Firmly replace all covers on liquid (paint, shellac, thinner, etc.) and store in safe dry place.

7. Police the area for tools and equipment and replace them in appropriate storage locations.

X. Use Paste Wood Filler

1. Apply filler to wood across the grain.

2. Rub in with burlap type cloth or with stiff rubber pad.

3. Wipe off excess filler across the grain.

4. Wipe lightly with the grain using soft, lintless cloth.

5. Allow to dry overnight.

XI. Rubbed Oil Finish

(Use 2/3 boiled linseed oil and 1/3 gum turpentine. You will need cloth that has little or no lint mixture or oil and turpentine polishing cloth--closely woven, hard cloth).

1. Smooth the surface and wipe away all dust and grit.

2. Under supervision, warm the oil mixture in a double boiler (NEVER directly over heat).

3. Apply to plain surface. (Hot oil penetrates wood more quickly than cold oil).

4. Apply cold oil to carved or grooved part.

5. Rub oil into the wood for 10 to 20 minutes until wood will absorb no more.

XII. Finish With Spray Paint

1. Identify commercial sprays sold at paint stores and read and follow the manufacturer's instructions.

2. Prepare an article for refinishing by using liquid sander--wipe on and rub off when taking off old wax and dirt.

3. Paint piece immediately while the surface is still soft with a light coat of base color according to the directions on the spray can. If trim is involved, tape off and spray a contrasting color.

4. Remove any hardward from piece and spray separately. An antique glazing liquid will give an excellent finish.

Advanced Level

I. Clean and Polish Wooden Finishes

1. Prepare furniture cleanser-conditioner to a consistency of 1/4 gum turpentine and 3/4 boiled linseed oil.

2. Determine if finish is shellac (cleanser-conditioned must be used sparingly on shellac).

3. Spread thick layers of papers on floor, ventilate room well.

4. Assemble equipment on a tray:

   a) cleanser-conditioner
   b) cup or small can
   c) saucer or small pie tin
   d) three old cloths
   e) 3/0 steel wool pad
   f) old toothbrush

5. Heat but do not boil water and pour into cup or small can.

6. Shake cleanser-conditioner and pour enough into water-containing cup to cover surface of water. (Do not sitr).

7. Dip cloth into oily layer.

8. Dip cloth into oily mixture which floats on surface of hot water.

9. Apply solution to small area. Keep excess moisture away from joints to prevent glue from softening.

10. Rub surface with mixture. Use toothbrush on carvings and grooves.

11. Dip 3/0 steel wool pad into solution and rub lightly with grain to remove dirt, if needed.

12. Dip clean cloth into clear, warm water, wring, and wipe surface. Wring dry for shellacked surfaces.

13. Wipe surface with dry cloth.

14. Discard mixture when cold.

15. Rub to restore luster.

POLISH FURNITURE AND ACCESSORIES

16. Dust furniture lightly with tack cloth.

17. Obtain appropriate furniture polish.

18. Dampen clean, absorbent, lintless cloth with polish.

19. Rub furniture.

20. Polish with dry woolen cloth.

21. Discard used cloths or store in covered jar, if flammable.

II. Polish Brass

1. Solid or pressed brass.

   a) apply a commercial brass cleaner or household ammonia. OR

b) remove brass hardware gently, and soak in household ammonia briefly. Rub with 3/0 steel wool, and clean in warm soapy water. Rinse and dry.

2. Antique-finish brass.

    a) polish with pure lemon oil (not lemon oil polish).

3. Brass finishes.

    a) apply commercial brass cleaner or thin paste of rottenstone and commercially boiled linseed oil. Wipe off paste with cloth moistened in boiled linseed oil. Polish with dry cloth.

III. Wash Leather

1. Dip cloth or sponge into warm water and wring out until damp.

2. Rub cloth over saddle coap or bar of castile soap.

3. Rub leather briskly.

4. Rub leather with another warm, moist cloth.

5. Rub surface with dry cloth.

RESTORE LEATHER

6. Apply small amount of dressing to leather with fingertips.

7. Rub with hands until dressing is completely absorbed.

8. Rub tooled areas gently.

9. Store dressing.

IV. Refinish Wood Furniture

1. Remove hardware, upholstery and caning when necessary.

2. Select and assemble supplies and equipment:

    a) paint and varnish remover (paste type)
    b) denatured alcohol solvent
    c) gum turpentine (if remover contains wax).
    d) putty knife
    e) wide wall spatula

f) 2 1/2 inch wide paint brush
g) orange or lollipop sticks or wooden meat skewers
h) burlap ravelings or twine
i) 1/0 steel wool; 2/0 steel wool for old veneer
j) old toothbrush
k) clean rags
l) newspapers
m) covered containers for remover and alcohol
n) covered metal container for used rags and papers
o) waterless hand cleaner

3. Remove old finishes using commercial remover.

a) place piece in a horizontal position so remover won't drip or run down
b) apply heavy coat of remover to one section at a time; not entire piece
c) protect other parts with newspaper
d) brush in only one direction if using wax-containing remover. Immediately wipe off any remover that drips on parts
e) let remover bubble thoroughly
f) on wide surfaces lift off remover and old finish, using a putty knife or spatula
g) for grooves and carvings, use toothbrush, orange stick, or skewer to clean away remover
h) for legs and rungs, wrap steel wool around burlap raveling or twine and dip in remover
i) apply generous second coat of remover
j) when bubbling stops, brush a third coat over the second coat
k) while third coat is still wet, scrub remover into wood with 1/0 or 2/0 steel wool. Use 2/0 steel wool on veneer
l) wipe remover and old finish from legs and rungs with pieces of clean newspaper or clean coarse rags
m) if necessary, repeat immediately. Apply remover until old finish is completely removed--until there are no shiny spots and stickiness

4. Counteract remover with denatured alcohol.

a) scrub surface with 2/0 or 3/0 steel wool dipped in denatured alcohol solvent
b) wipe with burlap or other coarse cloth dipped in fresh alcohol
c) wash entire piece with alcohol until wood does not appear light, powdery, or smokey, or feel slimy. Observe wood color while piece is wet

- d) determine if all remover is cleaned off to protect new finish
- e) clean grooves, turnings, and carvings, scrub with a wire suede brush or toothbrush and denatured alcohol, or use a burlap string and steel wool dipped in solvent
- f) clean around joints and carvings with an orange stick or wooden skewer or brush

5. Remove wax or silicone residues.

   - a) wash surface with gum turpentine
   - b) allow turpentine to remain in contact with finish for two or three minutes
   - c) change cloths frequently to prevent transfer of silicone residues from cloth back to wood surface
   - d) if wood remains waxy, repeat turpentine applications, changing to clean cloths each time
   - e) let dry 24 to 36 hours

6. Seal finish.

   - a) identify and select correct type sealer for the job:
     - 1) read sealer labels
     - 2) read sealer chart
     - 3) identify wax content sealer
     - 4) identify varnish-type sealer
     - 5) identify consistency of sealer
       - thin
       - medium
       - heavy
   - b) identify and select equipment and supplies
     - 1) sealer
     - 2) old nylon stockings, rayon or nylon fabric
     - 3) tack rag
     - 4) 3/0 steel wool
     - 5) lard, vegetable shortening, or waterless hard cleaner for cleaning hands after using sealer
   - c) before applying finish, wipe the surface with a dry cloth, then with a tack rag
   - d) strain sealer each time it is used by stretching a piece of nylon hose over the top of open can
   - e) dip a clean, lintless cloth (rayon or nylon fabric) into the sealer that wells up through the nylon hose
   - f) apply sealer to wood with cloth
   - g) apply sealer with cloth to one section at a time
   - h) use a circular motion, working across wood grain

  - i) immediately remove all surplus sealer, wiping with the grain, before applying sealer on next section
  - j) rub sealer in and off with hands
  - k) allow sealer to dry 24 hours

7. Smooth surface between finish coats.

   - a) smooth the surface gently with 3/0 steel wool
   - b) wipe surface

8. Apply second coat.

   - a) apply sealer as for first coat
   - b) rub sealer on, in, and off
   - c) after second coat dries, repair any small cracks
   - d) fill holes or gouges
   - e) reglue joints if necessary

9. Apply succeeding coats.

   - a) apply sealer as for previous coats
   - b) continue to apply finish coats until no dull spots appear

V. Smooth Large Surface with Abrasives

1. Identify and select:

   - a) grit size
   - b) paper size
   - c) smoothing block
   - d) wire suede brush
   - e) steel wool (3/0 or 000)
   - f) old cloth
   - g) masking tape

2. Wrap proper grit finishing paper around padded smoothing block.

3. Rub parallel to the wood grain.

4. Maintain even pressure.

5. Rub until smooth.

6. Rub with 3/0 or 000 steel wool.

7. Brush away sandings with suede brush.

8. Wipe entire surface with dry cloth and tack cloth.

9. Identify and select emery cloth for smoothing reedings, flutings, and end grain.

10. Select adequate file or rasp to smooth pulpy turnings, reeded legs, or carvings.

11. Rub all turnings, reeded legs, and carvings with emery cloth.

12. Rub end grain with emery cloth and smoothing block.

13. Rub with 3/0 or 000 steel wool.

14. Brush away sandings.

15. Wipe with dry and tack cloth.

VI. Stain Surface

1. Read a stain guide or chart.

2. Determine type of wood.

    a) wood with no color
    b) wood with light color
    c) wood with natural color

3. Select appropriate color and type of stain for wood type based on stain guide (chart)

4. Mix water stain.

    a) place stain powder into a clean glass jar. Cover mouth of jar with a clean thin cloth or nylon hose
    b) add warm water. Stir. Label container with color
    c) to obtain desired color, dilute with cold water. Mix two or three stain colors for blends
    d) smooth and stain a test area on underside of furniture to be sure color is appropriate for the wood

5. Apply water stain.

    a) wipe smoothed wood surface, especially turnings and end grains, with a damp cloth just before applying stain.

- b) apply water stain with a lintless cloth; wipe off excess with another cloth
- c) dry slowly and thoroughly in a well-ventilated area away from heat
- d) after drying at least 24 hours, smooth surface lightly with 3/0 steel wool, or 000 sandpaper. Use care in smoothing edges

6. Apply oil stain.

- a) wipe smoothed surface with dry cloth, then wipe gently with a tack rag
- b) mix three parts gum turpentine and one part boiled linseed oil
- c) apply mixture to smoothed end grain surface with a cloth
- d) wipe away excess with a cloth
- e) test stain color on underside to be sure it is appropriate
- f) apply stain with brush or cloth. Allow to remain on wood, long enough to penetrate and give desired effect
- g) wipe off surplus before it sets
- h) allow stain to dry for 24 hours
- i) smooth lightly with 3/0 steel wool to remove roughness

7. Rub oil finish.

- a) identify and select:
  - 1) lintless cloths
  - 2) mixture of 2/3 boiled linseed oil and 1/3 turpentine
  - 3) polishing cloth (closely woven, hard cloth)

8. Apply oil finish.

- a) smooth surface, wipe with dry cloth, then tack rag.
- b) heat oil mixture in double boiler (never directly over heat because of fire hazard) and apply to plain surfaces
- c) apply cold oil mixture to carved or grooved parts--hot oil may set too quickly
- d) apply oil generously with soft cloth, then rub it into wood for five to twenty minutes, until wood will absorb no more
- e) wipe away excess oil, changing clothes as needed. Remove all traces of oil from crevices; otherwise oil will harden like a varnish, or become sticky

- f) rub each part of the piece with a polishing cloth for 10 to 20 minutes
- g) apply as many coats as needed to bring out a shiny hard gloss surface. May need as many as 10 or 12 coats. Each coat must soak thoroughly into wood before another coat is applied
- h) test surface to determine if it is too oily or too sticky
- i) repeat process until no dull spots remain
- j) if the grain of the wood is raised with oiling, rub wood until smooth with 3/0 steel wool
- k) if oil hardens in crevices, remove with varnish remover
- l) destroy oil rags or wash them to prevent a fire hazard

VII. Apply Polyurethane Finish to Bare Wood

1. Thin first coat of polyurethane finish with mineral spirits according to manufacturer's recommendations.

2. Apply a smooth even coat over surface of bare wood with lintless cloth or lamb's wool applicator. Flow on and finish application with tip of bristles brushing toward corners and edges.

3. Dry 24 hours with sample air circulation.

4. Rub with "no-fill" paper--220 grit.

5. Steel wool gently.

6. Wipe off all surfaces after sanding.

7. Remove filings with vacuum or rag and tack cloth.

8. Within 48 hours apply a second coat (unthinned) over entire surface. Dry 24 Hours with good air circulation.

9. Prepare surface to apply polyurethane finish over sealer or varnish.

    - a) apply cleaning solvent such as Renuzit, Laiglon, or Afta to surface to remove grease and gloss (use many small cloths)
    - b) use 3/0 (000) steel wool to remove any remaining gloss
    - c) remove filings and sanding with vacuum cleaner or brush or cloth
    - d) wipe gently with a tack cloth

10. If areas are damaged, apply polyurethane finish to those areas which have "feather out" edges.

11. Dry 24 hours with ample air circulation. Steel wool gently, remove filings.

12. Apply polyurethane finish within 48 hours over entire surface.

13. If dull gloss is desired, use semi-gloss coat over gloss. Do not rub.

ELECTRONICS ASSEMBLY

It is often assumed that handicapped learners cannot succeed in highly technical career areas. For this reason, they are guided (or forced) into service occupations or other areas that are less intellectually demanding. This type of guidance is often inappropriate. Many of the most rewarding jobs that can be performed by slow learners exist within fields that are purported to be too "technical" for the handicapped to enter. Electronics is such a field. A careful study of this manual will bring to the attention of the special class teacher the skills associated with the electronics industry which can be learned and performed by the handicapped. Handicapped students have succeeded in learning the skills included in this unit and are now capable of fulfilling a niche in the electronics industry.

ELECTRONICS ASSEMBLY

Terminal Performance Objective

After completing prescribed learning activities, the student will be able to demonstrate entry level skills for employment in the electronics industry. Acceptable accuracy and speed for employment will be the criteria for determining the completion of the unit.

I. Soft Soldering

1. Identify, select, and use:
    - a) chisel and pyramid tips for hand wiring and general repair
    - b) bevel tips for soldering terminal pad connections or single sided p c boards for rapid heat transfer
    - c) conical tips for high density wiring, eyelets, and heat sensitive parts
    - d) radius groove - in high density wiring applications, round configurations (pen connectors, pot type terminals, and turret terminals)
2. Tin with soldering iron.
    - a) buff tip with 00 steel wool or emery cloth
    - b) dip tip in liquid resin flux
    - c) heat iron 30 s. for three minutes until melting point of solder is reached
    - d) check tip for temperature with resin core wire solder
    - e) apply liberal amount of solder to working end of tip (Wipe excess solder with wet sponge).
    - f) apply solder and wipe until entire working surface is covered with thin film of solder
3. Repair and refinish contaminated improperly tinned or pitted plain copper tip.
    - a) secure tip in vise with smooth surface, tip only is inserted in vise, not the handle
    - b) reshape tip flats with bastard file or second cut file
    - c) file tip surfaces with smooth cut file
    - d) complete final surface smoothing with fine crocus cloth and a block of wood

4. Hand solder PC board

   a) secure board in PC board holder and tilt to horizontal position
   b) clean surface to be soldered, be sure no oxides are present
   c) apply liquid solder to surfaces to be soldered using a small brush
   d) apply small amount of solder to tip of iron
   e) place entire flat of tip surface in contact with the terminal area and lead simultaneously
   f) allow joint to heat to melting point of solder
   g) apply solder to terminal pad and lead simultaneously at a point on the opposite side of lead
   h) remove solder from joint as soon as it begins to flow
   i) remove soldering iron as soon as solder wets entire connection and flows over the lead
   j) allow solder to cool before removing PC board
   k) check solder joint. It should be smooth and shiny; all surfaces should be welted, and the lead on the terminal pad should be clearly visible
   l) demonstrate use of head sink tools

5. Identify improper solder joints.

   a) identify solder peaking--sharp point of solder protruding from connection, caused by too rapid removal of heat
   b) identify incomplete welting--portions of soldered connections have not been alloyed caused by insuffient heat and solder or contaminants
   c) identify excessive solder--lead contour not visible
   d) identify cold solder joint--inferior

II. Wire Preparation and Assembly

1. Identify, select, and use:

   a) fully adjustable wire stripper
   b) step adjustable stripper
   c) automatic wire stripper

2. Operate fully adjustable wire stripper.

   a) close jaws around uninsulated wire until jaws are almost in contact about the circumference of the wire
   b) slide adjustment button is then moved along the radius groove until the jaws are set to desired opening

- c) strip by inserting the insulated wire into cutting jaws
- d) keep cutting jaws perpendicular to wire axis
- e) squeeze handles together
- f) hold wire with one hand
- g) pull insulation off with other hand
- h) never cock or twist the cutting jaws of strippers when pulling off insulation

3. Operate step adjustable stripper
    - a) follow directions for fully adjustable stripper except:
    - b) rotate selector step wheel until desired gauge number is oriented with the stop pin

4. Operate automatic wire stripper.
    - a) place wire in appropriate cutting jaw position and between gripping jaws (determined by gauge of wire).
    - b) squeeze handles gently together

5. Tin stranded wire.
    - a) strip insulation from wire
    - b) twist strands firmly together
    - c) place wire in vise where it is held gently
    - d) position soldering iron in contact with and under wire
    - e) apply solder directly on top of wire
    - f) draw iron and solder from end of wire to insulation and back again
    - g) trim to desired length with diagonal cutters

III. Wire Connections (wrap around)

1. Solder swagged turret terminal.
    - a) position wire against terminal with insulation positioned within 1/8" of terminal
    - b) tightly form wire 180° around terminal with long nose pliers
    - c) cut with diagonal cutters leaving sufficient length to complete 360° wrap around terminal
    - d) completely wrap wire around terminal by squeezing with long nose pliers which have smooth jaws
    - e) solder in place by using same technique as for soldering PC boards

2. Eyelet terminals

   a) same procedure as for turret terminal except perform first two 90° turns in wire before hooking through terminal

IV. Wire Connections (special assemblies)

1. Solder pot assemblies

   a) hold soldering iron tip against outside of solder pot terminal
   b) insert solder into pot allowing the pot to fill to one half the volume before removing solder
   c) continue to hold iron onto terminal for several more seconds to allow trapped gases to escape
   d) place tinned wire to be soldered into an anti-wicking tool
   e) reheat solder pot until solder in pot is liquid
   f) insert wire into pot which holds wire with anti-wicking tool
   g) remove iron and allow to cool
   h) the insulation should be within 1/16" of terminal and there should be no solder on outside of pot

2. Solder shielded wire to phono jack.

   a) remove approximately 1 1/2" of outer jacket (if outer shield is covered)
   b) push shield back from end to loosen it
   c) carefully work pick into braid about 3/4" back on shield so as to make a hole large enough in which to pull the insulated center conductor. (Be careful not to damage individual strands in braid)
   d) pass pick through hole between braid and insulation of center wire
   e) double wire back at breakout point
   f) lift pick to remove wire
   g) tin end of braid. Solder tinned center wire to center of plug using the same technique as with solder pot terminals
   h) wrap braid 360° around end of ferrule, then commence to solder

V. Chassis Hardware and Assembly

1. Identify, select, and use:

   a) machine screw heads:
      1) fillister
      2) binder

    3) pan
    4) round
    5) flat
    6) oval
    7) truss
- b) macnine screw drive configurations
    1) slotted
    2) hexagonal
    3) phillips
- c) machine screw sizes (most common)
    1) 2-56, unc   2-64 UNF
    2) 4-40, "   4-48
    3) 6-32, "   6-40
    4) 8-32, "   8-36
    5) 10-24, "   10-32
    6) 12-24, "   12-28
- d) nuts
    1) hex
    2) jam
    3) knurled thumb
    4) interference stop
    5) square
    6) cap
    7) spring top
- e) washers
    1) lock
    2) flat
- f) thread forming screws
    1) sheet metal
    2) machine
    3) self tapping
- g) tools
    1) screw drivers; standard, hex, phillips, stubby
    2) offset drivers
    3) offset ratchet
    4) screw holding mechanisms
    5) nutdrivers
    6) wrenches; box, open end, adjustable
    7) pot rivet
    8) ball peen hammer
    9) rivet set
    10) pop rivet gun

2. Pliers for assembly.

- a) long nose
- b) gas
- c) slip and rib joint

3. Tap and dies
   - a) straight adjustable, chuck handle
   - b) "T" style
   - c) split dye
   - d) dye stock

4. Printed circuit hardware and component assembly.
   - a) solder terminal
     - 1) hand staking, anvil, bootholder, setting tool, hammer
     - 2) impact staking, automatic import stacker tool
     - 3) pressure stacking arbor press

5. Axial lead component
   - a) component lead bending
   - b) tapered round nose pliers
   - c) universal bending block
   - d) vertical mounting techniques
   - e) diagonal cutters

AUTOMOTIVE MECHANICS

Terminal Performance Objective

After completing prescribed learning activities, the student will be able to assist an automotive mechanic to perform minor tune up and maintenance operations. Performance will be judged acceptable by the course instructor.

I. Tools

1. Identify, select and use:

   a) rachet wrenches and extensions set
   b) socket set (3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16" and 1"
   c) open-end wrench set
   d) feeler gauges set
   e) standard screwdrivers
   f) Phillips head screwdrivers
   g) fuse puller
   h) channel lock pliers (large)
   i) battery terminal brush
   j) ignition wrenches
   k) engine manuals
   l) Allen wrench set

II. Spark Plugs

1. Identify:

   a) spark plug wires (with terminal clips and sealing nipples)
   b) spark plug
   c) engine block
   d) gap
   e) electrodes (ground and center)
   f) compression washer
   g) terminal stud

2. Remove spark plug.

   a) remove spark plug wire from plugs while handling wire as close to clip as possible
   b) remove spark plug from engine block using proper size of socket and rachet (turning in a counter-clockwise direction)
   c) clean threads in engine block with dry rag

2. Prepare replacement spark plug

    a) use plugs of proper type and heat range
    b) remove plug from box and install compression washer if compression washer comes with the plug
    c) check engine manual for proper gap
    d) open or close gap in replacement plug using a feeler gauge to determine the proper gap between the ground electrode and outer electrode

3. Install replacement plug.

    a) place plug in engine block and hand turn to avoid cross threading
    b) tighten plug snugly using proper rachet and socket (13 ft. lbs. torque if using torque wrench)
    c) replace spark plug wire clip on terminal stud
    d) push sealer nipple in place

III. Distributor Cap

1. Identify:

    a) distributor cap
    b) hold-down clips (or screw)
    c) spark plug wires
    d) coil wire
    e) cap aligning notch and protuberance

2. Replace distributor cap.

    a) disengage hold-down devices
        1) screw type (GM) - place screwdriver in slot of screw, press down on springloaded screw and turn it a half turn (180°)
        2) clip type (others) - place screwdriver at top of clip and pry outward
    b) pull off cap with fingers, lay aside, taking care to avoid the disturbance of any of the wires
    c) install recommended distributor cap, being careful to align notch and protuberance
    d) secure hold down clips (or screw)
    e) turn defective distributor cap to face in same direction as replacement cap by referring to aligning notch
    f) remove wires from old distributor cap and insert in corresponding hole of new distributor cap (one wire at a time)

IV. Distributor Rotor

1. Identify:

    a) distributor cap
    b) breaker plate assembly
    c) rotor
    d) alignment systems
    e) distributor shaft

2. Remove distributor cap, place aside, taking care not to disconnect wires.

3. Replace distributor rotor.

    a) disengage rotor
        1) screw down (GM) - remove two screws, pull upward, noting position of rotor
        2) push on (others) - pull straight up and off
    b) install replacement rotor
        1) screw down - align circular peg and square peg on rotor with corresponding holes in breaker plate
        2) push-on - key way in rotor slides down over key on distributor shaft
    c) install distributor cap with correct alignment
    d) screw cap down or clip on

V. Condenser

1. Identify:

    a) distributor
    b) distributor cap
    c) rotor
    d) condenser
    e) condenser wire
    f) points
    g) breaker plate

2. Remove defective condenser.

    a) remove distributor cap (screw or clip)
    b) remove rotor by referring to manual
    c) disconnect condenser wire from points using an ignition wrench
    d) disconnect condenser from breaker plate, using a screwdriver

3. Replace Condenser

a) acquire and use a recommended condenser for replacement
b) install new condenser in same position as previous condenser
c) fasten condenser to breaker plate
d) attach condenser wire to points
e) install rotor in same position in which it was removed
f) place distributor cap on distributor and fasten
g) make sure all wiring is intact

VI. Breaker (Distributor) Points

1. Identify:

a) points (movable/stationary)
b) distributor cap
c) rotor
d) condenser wire
e) breaker plate
f) distributor shaft
g) distributor shaft cam
h) primary terminal
i) adjusting screw
j) lock screw
k) pivot post
l) breaker spring
m) rubbing block

2. Remove points.

a) remove distributor cap
b) remove rotor from shaft
c) disconnect points from primary terminal (condenser wire may come off also)
d) disconnect points from breaker plate by removing lock screw
e) pull points straight up over pivot post

3. Install points.

a) grease lightly the distributor shaft cam
b) slide points onto pivot post
c) connect breaker spring to primary terminal, making sure condenser wire is also connected
d) install lock screw
    1) GM type - tighten lock screw at this time
    2) other types - do not tighten lock screw at this time

e) rotate distributor cam so that rubbing block is on a high spot of cam by turning fan of clicking starter on and off
f) refer to manual for point gap setting
g) insert feeler gauge of proper size between stationary point and movable point
h) using proper tool (Allen wrench for GM and screwdriver for others), turn adjusting screw until both points just close on feeler gauge
i) tighten all lock screws at this time
j) replace rotor properly
k) replace distributor cap properly

VII. Replacing a Coil

1. Identify and select for use:

a) ignition wrench set
b) screwdriver
c) coil wire
d) distributor wire
e) ignition wire
f) coil
g) distributor cap
h) primary terminal (-)
i) high tension terminal (center)
j) distributor side terminal (+)

2. Secure proper replacement coil.

3. Remove defective coil.

a) disconnect coil wire, by pulling straight off
b) disconnect distributor wire with ignition wrench
c) disconnect ignition wire(s) from coil with ignition wrench
d) unbolt (or unscrew) coil and remove from mounting

4. Install replacement coil.

a) mount coil securely in same position as old coil
b) locate and connect ignition wire(s) to primary terminal(s) (marked with negative sign on coil case)
c) locate and connect distributor wire to terminal marked with positive sign on coil case
d) locate and connect coil wire to high tension terminal and push rubber sealing nipple into place
e) check opposite end of coil wire to be sure it is properly connected to distributor cap

VIII. Replace Wiring Harness

1. Identify and select for use:

    a) distributor cap
    b) spark plugs
    c) coil wire
    d) wiring harness
    e) wire loom
    f) wire puller (optional)
    g) side cutters
    h) parallel jaw pliers
    i) terminal clips
    j) sealing nipples

2. Replace coil wire.

    a) obtain proper replacement wiring harness kit
    b) disconnect and remove by hand the old coil wire
    c) select shortest wire in kit
    d) lay new wire and old wire side by side
    e) cut new wire to same size at unfinished end
    f) insert sealing nipple over unfinished end
    g) insert sharp end of terminal clip down through center of unfinished end of new coil wire
    h) bend terminal clip and insert prongs into wire jacket
    i) connect new coil wire between high tension terminal of coil and center terminal of distributor cap
    j) push two sealer nipples in place

3. Replace spark plug wires - one at a time.

    a) begin replacement with longest spark plug wire; work down to shortest
    b) disconnect and remove longest spark plug wire, noting wire's position in wire loom
    c) select longest replacement wire in kit
    d) repeat steps d) through h) under 2. above
    e) connect one end of wire to spark plug
    f) secure wire in proper location in wire loom
    g) insert other end into proper place in distributor cap
    h) push the two sealer nipples into place
    i) keep all wires away from heat
    j) avoid removing more than one wire to work one at a time
    k) Repeat steps a) through j) for remainder of spark plug wires

IX. Fuses

1. Identify and select for use:

   a) fuse types
   b) fuse sizes
   c) fuse block
   d) fuse puller (optional)
   e) blown fuse
   f) flashlight
   g) ignition switch

2. Trouble-shoot blown fuse.

   a) isolate faulty circuit (radio, lights, et al.)
   b) locate fuse block (normally under dash on driver side)
   c) locate suspected fuse by reading fuse block labels
   d) remove suspected fuse and visually check for broken element
   e) go on to each fuse, in turn, if necessary

3. Install replacement fuse.

   a) secure new fuse of same size and amperage as the blown fuse
   b) make sure ignition switch is off
   c) locate fuse position on fuse block
   d) press both metal ends simultaneously into fuse clips
   e) check circuit by turning on switch and defective circuit part

X. Light Bulbs

1. Identify and select for use:

   a) parking lights
   b) brake lights
   c) directional lights
   d) back-up lights
   e) license plate lights
   f) convenience lights (door, map, glove compartment, dome, etc.)
   g) socket
   h) ignition switch
   i) various light switches
   j) screwdriver (if necessary)
   k) rags or gloves (if necessary)
   l) bulb types and sizes and bases

2. Locate burnt out bulbs.

3. Achieve access to bulb in easiest manner. (Open trunk, remove lens, remove socket, remove receptacle frames, etc.)

4. Remove bulb from socket carefully by pushing bulb into socket and turning counter-clockwise.

5. Secure bulb of proper type and size and base styles.

6. Insert and press bulb into socket while simultaneously turning it clockwise.

7. Replace sockets, lenses, frames, etc. in same manner as removed.

8. Check by turning on proper switch.

XI. Replace Sealed Beam Headlights

1. Identify and select for use:

   a) sealed beams
   b) Phillips head screwdriver
   c) slot screwdriver
   d) headlight trim, retaining rim
   e) adjusting plate

2. Remove retaining rim with proper screwdriver.

3. Pull out headlight and unplug wire assembly from rear.

4. Take precautions not to disturb adjusting plate.

5. Secure sealed beam of same size and type.

6. Place in receptacle.

7. Align wire assembly plug with prongs on sealed beams and connect by pushing together.

8. Locate in proper position in receptacle and reinstall retaining rim.

XII. Change Oil

1. Identify, select, and use:

   a) crankcase dip stock
   b) oil filler spout on valve covers

  c) oil pan and oil pan drain plug
  d) open end wrench
  e) waste oil container
  f) rag(s)
  g) oil weights and types
  h) oil pressure indicators (light or gauge)
  i) oil can opener spout
  j) oil filler spout cap
  k) auto manuals
  l) car jack or lift

2. Determine proper time for change according to mileage, days, or condition of oil.

3. Jack up auto in a safe manner.

4. Locate drain plug.

5. Place waste oil container directly under drain plug.

6. Remove drain plug with open-end wrench by turning counter clockwise.

7. Re-center waste oil container under drip, if necessary.

8. Allow to drain thoroughly.

9. Replace drain plug.

10. Lower car to ground.

11. Check automobile manual to determine the proper type and amount of oil to replace.

12. Raise hood.

13. Remove oil filler cap.

14. Insert can spout into can.

15. Place spout into filler spout and allow to drain thoroughly.

16. Repeat steps No. 14. and 15 until proper amount of oil is reached.

17. Replace oil filler spout cap.

18. Start engine.

19. Allow engine to run until oil pressure indicator reacts to indicate proper oil pressure. Shut off engine.

20. Check dip stick for proper level.

21. Look under car and visually check drain plug for proper seal.

22. Re-jack car and re-tighten drain plug, if necessary.

23. Record oil change date, mileage, and oil type for future reference.

XIII. Change Oil Filter (To be completed simultaneously with oil change)

1. Identify, select and use:

    a) oil filters
    b) crank case dip stick
    c) oil filler spout
    d) oil pan and oil pan drain plug
    e) open end wrench
    f) oil filter wrench or large water pump pliers
    g) waste oil container
    h) oil weights and types
    i) oil pressure indicators (lights, gauges)
    j) oil can opener spout
    k) oil filler spout cap
    l) oil filter gaskets
    m) auto manuals

2. Perform steps 2. through 9. for changing the oil.

3. Locate oil filter.

4. Position waste oil container under oil filter.

5. Using oil filter wrench, remove oil filter by turning counter clockwise.

6. Allow time for oil to drain.

7. Using auto manual as guide, secure proper type and size of oil filter.

8. Replace oil filter by turning clockwise into position.

9. Install oil filter gasket in proper position (if applicable).

10. Hand tighten oil filter only.

11. Perform steps 10. through 20. of oil change.

12. Visually check drain plug and oil filter for proper seal.

13. Re-tighten if necessary.

14. Record oil and oil filter change date, mileage and oil type for future reference.

XIV. Lubrication

1. Identify, select and use:

   a) types of grease
   b) grease gun
   c) rags
   d) auto manual
   e) car jack or lift
   f) grease fittings
   g) joints

2. Check manual for types and locations of all grease fittings for car to be greased.

3. Jack up car in safest manner possible.

4. Fill grease gun with recommended type of grease.

5. Locate grease fitting(s).

6. Clean fitting with dry rag.

7. Press grease gun nozzle firmly onto fitting.

8. Pump grease into fitting in the amount recommended by the owner's manual.

9. Wipe excess grease from joint and fitting.

10. Check to make certain all fittings are filled.

11. Perform the following lubrication checks:

   a) transmission fluid level
   b) differential oil level
   c) brake fluid level
   d) crank case oil level
   e) radiator water level
   f) battery water level
   g) power steering fluid level
   h) air filter for excessive dirt

(See Auto Mechanics No. XV for these checks.)

12. Remove car from jacks or lift and record date and mileage of lubrication for future reference.

XV. Standard Preventive Maintenance Checks

1. Check transmission fluid level:

STANDARD SHIFT

a) identify, select, and use:
    1) transmission housing
    2) drain plug
    3) fill plug
    4) 90 weight gear oil
b) locate filler plug
c) remove filler plug with proper wrench
d) check, by sticking little finger in filler plug hole, that oil level is right at bottom rim of hole
e) if oil is down, pump new gear oil in until small amount seeps over hole
f) insert plug
g) record date and mileage of check

AUTOMATIC SHIFT

a) identify, select, and use:
    1) transmission housing
    2) dip stick
    3) transmission fluids
b) locate transmission dip stick
c) remove dip stick and wipe dry
d) read instructions printed on dip stick. (Dip stick will usually read: "engine running with transmission in neutral"
e) follow dip stick instruction
f) insert dip stick to maximum depth
g) remove dip stick
h) check fulid level on stick
i) check fluid color for deterioration (fluid should be red. If it is brownish, this is an indication of a further problem).
j) add fluid, if necessary
k) re-check dip stick to see if proper fluid level has been reached
l) record date and mileage

2. Check level of brake fluid.

   a) identify, select, and use:
      1) brake fluids
      2) brake reservoir
      3) screwdriver (or wrench)
      4) brake reservoir cap
   b) locate brake reservoir (normally on fire wall, driver side)
   c) remove cap on brake reservoir with screwdriver (or wrench)
   d) maintain fluid level to the top of the reservoir, just ready to overflow
   e) fill to top with brake fluid, if necessary
   f) replace cap
   g) record date and mileage

3. Check oil level of differential case.

   a) identify, select, and use:
      1) open end wrench
      2) rags
      3) differential
      4) 90 weight gear oil
      5) differential filler plug
      6) oil pump
   b) locate differential case and filler plug
   c) remove filler plug (higher plug, if there are two)
   d) place little finger in opening to check oil level (oil should be right at bottom rim of opening)
   e) pump in 90 weight gear oil, if necessary
   f) replace filler plug snugly
   g) wipe off excess oil around case
   h) record date and mileage

4. Check water level in radiator.

   a) identify, select, and use:
      1) radiator pressure cap
      2) radiator
      3) radiator filter spout
      4) water pouring device
   b) locate radiator pressure cap
   c) allow radiator to cool, if necessary
   d) remove pressure cap by pressing down and turning counter clockwise until first notch resistance is met
   e) allow excess steam pressure, if any, to escape
   f) complete removing pressure cap by pressing down and turning counter clockwise

- g) inspect water level and fill to the proper level, if necessary, OR
- h) fill to bottom of filler neck, if no other level is indicated
- i) replace pressure cap
- j) record date and mileage

5. Check electrolyte level in battery.

- a) identify, select and use:
  - 1) battery
  - 2) battery cell cap(s)
  - 3) electrolyte (battery acid)
  - 4) water pouring device
  - 5) split rings
- b) locate battery
- c) remove battery cell caps
- d) maintain electrolyte solution at the proper level
- e) fill to proper level, if necessary, with distilled water
- f) replace battery cell caps
- g) record date and mileage

6. Check tire pressure.

- a) identify, select, and use:
  - 1) tire (size, type, pressure, tube or tubeless)
  - 2) tire valve stem
  - 3) tire valve stem cap
  - 4) tire pressure gauge
  - 5) hub cap
  - 6) valve core
- b) locate valve stems on tires (remove hub caps if necessary)
- c) remove valve stem caps by turning counter clockwise
- d) fit nozzle of tire pressure gauge over valve stem quickly and firmly
- e) read pressure gauge level
- f) add air to stem or remove air by pressing down valve core with valve stem cap or other handy insertion
- g) repeat steps d) and e), to maintain correct pressure
- h) repeat step f) if necessary
- i) replace valve cap
- j) repeat above procedures for all tires, including the spare tire
- h) record date and mileage

XVI. Air Filter Check or Change

1. Identify, select, and use:
   - a) air filters (types)
   - b) carburetor
   - c) air filter positioning pan
   - d) air filter positioning pan cover
   - e) cover hold down device(s) (clips, wing nuts, etc.)
   - f) high pressure air hose
   - g) auto manual
2. Remove air filter pan cover by removing wing nut and raising cover.
3. Remove air filter element from pan.
4. Visually check element for cracks and other defects.
5. Remove excess dirt from filter element by tapping it on a hard object (floor), rotate element and tap again until all loose dirt is removed. Be careful not to disform element in any way.

   Dirt may also be removed by using a high pressure air hose and blowing from the center of element, through paper filter, to the outside.
6. Check owner's manual for recommended type and size of air filter if replacement seems necessary.
7. Reposition air filter positioning pan on top of carburetor by aligning notches and extrusions.
8. Replace and position filter element in pan.
9. Replace cover over pan and filter element.
10. Secure hold down devices.
11. Tighten hold down devices, but not to the extent that carburetor damage results.
12. Record date and mileage of change for future reference.

XVII. Clean Battery Terminals

1. Identify, select, and use:

   a) battery
   b) battery terminals (+ and -)
   c) battery cables (+ and -)
   d) hose
   e) knife
   f) wire brush or sand paper
   g) open end wrench
   h) screwdriver
   i) baking soda
   j) paint brush
   k) battery cable clamps

2. Loosen bolts on cable clamps with proper wrench.

3. Spread clamp by prying lugs of clamp apart with screwdriver.

4. Remove cable clamps from terminals and position cables so as not to interfere with future steps.

5. Clean battery case, terminals, cables, etc. with baking soda, water solution, and paint brush.

6. Wash away all corrosion.

7. Polish terminals with steel brush or sandpaper.

8. Scrape inside of clamps with pocket knife.

9. Re-hose all surfaces.

10. Pry clamps over terminals and tighten bolts until snug.

11. Place clamps over terminals and tighten bolts until snug.

12. If excessive corrosion is evident around terminals, check for cracks and leaks in battery case.

XVIII. Flush Car Radiator and Add Antifreeze

1. Identify, select, and use:

   a) antifreeze
   b) auto manual
   c) antifreeze protection chart
   d) radiator
   e) radiator cap and filler spout
   f) radiator drain cock

  g) hose
  h) pliers
  i) waste container or drain
  j) thermostat
  k) temperature gauge
  l) lower radiator hose
  m) antifreeze can opener spout

2. Bring engine to operating temperature.

3. Remove radiator cap by pushing down and turning counter-clockwise until first notch.

4. Allow steam pressure to escape.

5. Finish removing cap by turning to second notch and lifting.

6. Turn radiator drain cock counter-clockwise to allow system to drain. (May also be done by removing lower radiator hose.)

7. Drain system into waste container.

8. Insert hose into the radiator and allow to run until clean water runs out the drain cock.

9. Close drain cock (or replace hose) by turning clockwise.

10. Fill system and replace radiator cap.

11. Start engine and bring to operating temperature.

12. Repeat steps Nos. 3 to 7.

13. Close drain cock (or replace hose).

14. Check auto manual for cooling system capacity.

15. Refer to antifreeze protection chart (usually on back of antifreeze can) for amount of antifreeze needed.

16. Add proper amount of antifreeze.

17. Fill the remaining system with water.

18. Start engine and bring to operating temperature.

19. Check and add more water as needed during step No. 18.

20. Replace radiator cap.

21. Record date and mileage of flush and antifreeze change for future reference.

XIX. Use a Bumper Jack

1. Identify, select and use:

   a) bumper jack assembly
   b) bumper jack instructions (on trunk or in manual)
   c) blocking device(s) for wheels
   d) lift points
   e) bumper jack clamp or spring

2. Open trunk and remove jack from clamp.

3. Read the jacking instructions.

4. Block both wheels at opposite end from end to be raised.

5. Locate lift points.

6. Position jack at most suitable lift point to end or corner of car to be raised.

7. Set directional lever to raise (or lift) position.

8. Elevate car carefully, looking for jack slippage or excessive tilt of jack assembly.

9. Reposition jack if these situations develop.

10. Set directional lever to the lowering (or down) position.

11. Carefully lower car to ground taking care that no person or tool is under car and that jack is not slipping or tilting.

12. Remove jack and blocks and reposition jack in trunk.

XX. Change a Tire

1. Identify, select and use:

   a) bumper jack
   b) lug nuts
   c) lug wrench
   d) screw driver
   e) hub cap
   f) tire
   g) rim
   h) brade drum
   i) oil can

2. Locate hub cap and remove with screwdriver, taking care not to mar chrome.

3. Locate lug nuts and loosen them slightly with counter-clockwise turn of lug wrench.

4. Remove bumper jack and spare tire from car.

5. Elevate car using bumper jack instructions properly (see No. XIX) so that bottom of tire is 2" above ground.

6. Remove lug nuts with lug wrench, turning counter-clockwise and place lug nuts in hub cap to prevent their loss or misplacement.

7. Remove tire from lugs and rim by pulling straight out from brake drum.

8. Put a small amount of oil on the lugs.

9. Install spare tire.

10. Place lug nuts on lugs and turn clockwise by hand until resistance is met.

11. Tighten lug nuts with lug wrench, going from one lug to the opposite one so that both sides of the rim tighten uniformly.

12. Lower the car to the ground according to jacking instructions.

13. Re-tighten lug nuts.

14. Install hub cap.

15. Check air pressure of replacement tire.

XXI. Rotate Tires (Standard 5-Way Rotation)

1. Identify, select, and use:

   a) bumper jack (or other)
   b) lug wrench
   c) screwdriver
   d) lug nuts
   e) lug bolts
   f) brake drum
   g) rim
   h) tire
   i) wheel

2. Remove spare tire from trunk or holder.

3. Raise car by jacking at proper lift point for right rear wheel.

4. Remove right rear wheel as specified in No. XX.

5. Replace right rear wheel with spare tire as specified in No. XX.

6. Lower the car.

7. Proceed to left front wheel and repeat steps Nos. 3 to 6, replacing left front wheel with right rear wheel.

8. Proceed to left rear wheel and repeat steps Nos. 3 to 6, replacing left rear wheel with left front wheel.

9. Proceed to right front wheel and repeat steps Nos. 3 to 6, replacing right front wheel with left rear wheel.

10. Place right front wheel in spare tire well or holder.

11. Check all lug nuts with lug wrench to be sure they are snugly fastened.

12. Record date and mileage of rotation.

THE
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GUIDE

chapter 4

At Your Service

Curriculum Units Page

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WAITER AND WAITRESS TRAINING

Disadvantaged and handicapped individuals need training which will allow them to enter the competitive labor market with marketable skills. This unit introduces students to an ancient trade that has provided the livelihood of many, and supplemented the income of millions. Not only does it have vocational merits, it has an everyday application as well.

Motivational Projects

1. Field trips to a variety of restaurants to observe table service techniques.
2. Simulate dining situations.
3. Participate in faculty dining room as waiters and waitresses.
4. Visit a restaurant to observe and interact with professional waitresses.
5. Provide students with cassette recorder. Have class prepare interview questions to ask waitress in local dining establishments. Interview waitresses in various types of restaurants.
6. Visit a specialty restaurant.

Resource Materials

Films--National Educational Media, Inc.
15250 Ventura Boulevard
Sherman Oaks, Calif. 91403

"Courtesy: Food Service is People Service" (FS114)

"Courtesy: The Inside Story" (FS115)

"How Do You Look When It Counts?" (FS116)

"Taking the Order" (FS117)

"Presentation of Food and Beverage" (FS118)

"Mr. Busboy" (FS120)

"Rush Hour Service" (FS128)

Book--The Waiter and Waitress Training Manual by Sondra Dahmer and Kurt W. Kahl

Cahners Books
89 Franklin Street
Boston, Mass. 02110

Record--The Successful Waitress. A Way to Train Waitresses.

Two long-playing records, four sides, and a training teacher's guide.

Institutional Food Service Division
General Foods Corporation
Kankakee, Illinois

Training Kit--Waitress Self Training Kit - Includes workbooks, training guide, test, photo trainers, kit case.

Restaurant-Hotel Aids, Inc.
Loring Building
1409 Willow Street
Minneapolis, Minnesota 55403

Pamphlet--Waitress and Waiter Training Manual

The Tourist Service Consultant
Department of Education
3650 Willingdon Avenue
Burbaby 2
British Columbia, Canada

SERVING A MEAL

Terminal Performance Objective:

Upon completion of this unit, the student will be able to successfully serve a meal according to standard waitressing procedures.

I. Set a Table

1. Decide how many places to set up.

2. Use place mats or tablecloth when available.
3. Place folded napkin near the left edge of place mat with folded edge facing out.
4. Place fork on top of napkin--use two forks, the smallest one goes on the left.
5. Place knife, sharp side in, approximately 10-12 inches to the right of the fork.
6. Place spoon to the right and next to the knife--if two spoons are required, place them side by side on the right of the knife.
7. Put water glass or beverage above the knife.
8. Put salad plate above the fork and napkin.
9. Place full salt, pepper shakers, and condiments on each table.

II. Take an Order

1. Greet customer warmly.
2. Give menu to customer and pour water.
3. Allow customer enough time to examine menu.
4. Explain clearly what are the specials of the day.
5. Listen attentively to customer.
6. Write order legibly on check.
7. Take menus from customers.
8. Deliver order speedily to appropriate station.

III. Serve Food

1. Serve food from the left in proper order:
    a. Soup or appetizer, crackers
    b. Salad
    c. Entree, rolls, butter, vegetables
    d. Dessert
    e. Beverage when desired by customer
2. Serve all customers at the same table at the same time.
3. Check to make sure customers have everything which they need.

4. Give customers enough time to finish each course.
5. Remove empty dishes from the right before serving next course.
6. Serve coffee on the right.
7. Remove remaining dishes and clean table after the customer leaves the table.

IV. Prepare a Check

1. Add correctly and thoroughly all items on check.
2. Figure tax correctly and add to bill.
3. Total the bill.
4. Present check to customer when meal is finished.
5. Present check face down.
6. Be courteous and make pleasant remark to customer if appropriate.
7. Know procedure for paying check.
    a. Check paid to waiter or waitress on small tray
    b. Check presented to cashier on way out

V. Clear and Clean a Table

1. Watch for vacant table and clear as soon as possible.
2. Load articles on to tray and place on tray holder or other vacant table.
    a. Bring tray or tub to table with damp cloth
    b. Remove large dishes first
    c. Stack when possible
    d. Clear table of all dishes, glasses, silver, and paper products
    e. Collect tip
    f. Wipe table clean
    g. Arrange salt and pepper shakers, etc. if not in proper place
    h. Clean ash tray and replace
    i. Wipe seats if needed

3. Carry tray to kitchen.

4. Clear tray.

   a. Separate paper and throw away
   b. Separate silver and put in designated area
   c. Give dishes to dishwasher
   d. Wipe tray clean

5. Reset table.

6. Return to station and clean area if necessary.

VI. Follow General Tips for the Trade

1. Keep working areas clean and neat.

2. Be pleasant.

3. Get menu changes right before starting work.

4. Arrive at work a few minutes early.

5. Wear comfortable shoes.

6. Wear hair net.

7. Wear clean uniform.

8. Be neat and clean in appearance.

9. If you have questions, ask the person in charge.

10. Stock station when not busy.

INTRODUCTORY GARDENING

The purpose of this unit is to introduce junior high handicapped and disadvantaged students to the fundamentals of establishing a small home vegetable garden which contains the common varieties adaptable to the local climate.

Resource Materials

Slides

"The Home Vegetable Garden." University of Minnesota.

"Know Your Kinds of Fruits and Vegetables." University of Minnesota.

Films

"Tips on Transplanting Tomatoes." 14 min. University of Minnesota.

"For Your Potato Pleasure. The Marketing Story." 12 min. University of Minnesota.

Fruit and Vegetable Film Directory. United Fresh Fruit and Vegetable Association.

Pamphlets and Brochures

The Home Vegetable Garden. University of Vermont Extension Service.

Starting Plants at Home or School. University of Vermont. Brieflet No. 1210.

Growing Vegetables in the Home Garden. Home and Garden Bulletin No. 202. U.S. Department of Agriculture.

Selecting Fertilizers for Lawns and Gardens. Home and Garden Bulletin No. 89. U.S. Department of Agriculture.

Insect and Disease Control in the Home Vegetable Garden. University of Vermont Extension Service. Brieflet No. 1158.

Growing Tomatoes in the Home Garden. Home and Garden Bulletin No. 180. U.S. Department of Agriculture.

Farm Fertilizers. University of Vermont Extension Service. Brieflet No. 1153.

Quick Home Compost. University of Vermont Extension Service.

How to Improve Your Garden Soil. University of Vermont Extension Service. Brieflet No. 878.

Man and Pesticides. University of Vermont Extension Service.

a) How Do Pesticides Affect Our Environment?
b) What Are Pesticides?
c) The Story of DDT
d) How Are You Protected?
e) Pesticides in a Hungry World.
f) Pesticides and Human Health.

GARDENING

Terminal Performance Objectives:

Given a 25' x 30' prepared garden plot, garden tools and supplies, common vegetable seeds, and classroom and laboratory instruction, the student will plant, maintain, and harvest at least five garden vegetable varieties according to acceptable gardening practices recommended by a county agricultural agent.

I. Select a Garden Site

1. Locate a sunny location.

2. Determine if soil is well drained.

3. Locate a garden plot convenient to home and water.

4. Guard the plot against animals.

II. Prepare Soil

1. Determine soil type (sandy, clay, loam)

2. Determine fertility of soil (soil test--send to Extension Service--request a soil analysis breakdown for garden).

3. Apply lime and fertilizer according to soil test results.

4. Spade ground and rake smooth and remove weeds.

III. Choose Garden Tools

1. Identify a spade or spading fork--steel hair rake--and Warren hoe.

2. Use tools properly.

IV. Plan the Garden

1. Plant seeds that require little space together. (Lettuce--radishes; beets--spinach--onions--carrots)

2. Plant varieties using more space together. (Beans--potatoes--cabbage--melons--cucumbers)

3. Arrange large plants such as corn, sunflowers, etc. (plant on edge or western part of garden so as not to shade other crops).

4. Space plants and rows.

5. Plant according to seed package recommendations or Extension Service recommendation.

V. Select Vegetable Seed

1. Buy quality seeds.

2. Buy disease resistant strains and varieties.

3. Choose seed varieties adapted to local area.

VI. Start Plants Indoors

1. Prepare germinating seed bed using following mix: Mixture of 1 part sand and 1 part vermiculite.

2. Place soil in flats two to three inches deep and pat firm and level.

3. Make rows two inches apart in soil flats.

4. Plant seeds according to directions on packages.

5. Moisten soil to depth of one inch. (Do not allow seeds to dry once planted).

6. Place flats in sunny location and cover with clear plastic, until plants emerge.

7. Water periodically with prepared liquid vertilizer. (Use as directed on label).

8. Transplant seedlings to outdoors when conditions are appropriate.

   Common transplants--cabbage, tomatoes, peppers, brocolli and cauliflower.

9. To plant outdoors, use soil analysis from Extension Service to guide the application of fertilizer to soil, and thoroughly mix into soil. (Early Spring--April, May).

10. Prepare garden plan (sketch of garden).

11. Plant seed according to time and order as given on seed package.

12. Mark off rows with string.

13. Plant seeds to proper depth by making a seed furrow.

14. Cover seed and firm soil by tamping.

VII. Care for a Garden

1. Thinning. Thin seedlings to proper distance when plants are well established.

2. Cultivate weekly, weed weekly.

3. Determine need for consistent watering.

4. Explain the danger of overwatering and underwatering.

VIII. Control Insects and Diseases

1. Identify sources of information for insect and disease control.

   a) Extension service personnel
   b) County agent
   c) Agribusiness teacher
   d) Garden experts
   e) Agricultural supply store salesman

2. Apply disease and insect control products as directed. (Use extreme caution with any and all poisonous chemicals).

3. Apply only organic insecticides.
4. Use safety devices--clothing, gloves, mask.

IX. Harvest a Crop

1. Harvest crops at proper stage of maturity.
2. Pick produce without damaging plant.
3. Identify crops or vegetables that can be reharvested.
4. Clean, wash, and store common vegetables.

ADVANCED

GARDENING AND GROUNDSKEEPING

The gardening and groundskeeping activities outlined in this unit represent valuable learning experiences for every student. The recreational and economic advantages of gardening and similar outdoor activities are readily apparent. In addition, gardening activities provide the classroom teacher an excellent opportunity to present lessons in such related areas as ecology, botany, nutrition, as well as in storage, preparation and preservation. The student can apply his skills immediately in part-time employment situations or at home.

Sometimes it is impossible to plant a garden on school property. In this case, consider putting in a garden for someone who lives near school property. If this cannot be done, arrange to put in a garden at the home of one of the students, a faculty member, or a senior citizen. Your County Extension Agent can usually suggest someone who would provide land for the class.

Resource Materials

Slides

"The Home Vegetable Garden." University of Minnesota.

"Know Your Kinds of Fruits and Vegetables." University of Minnesota.

Films

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d) How Are You Protected?
e) Pesticides in A Hungry World.
f) Pesticides and Human Health.

GARDENING PRACTICES

Terminal Performance Objective:

Given a 25' x 30' prepared garden plot, gardening tools and supplies, common vegetable seeds, and classroom and laboratory instruction, the student will plant, maintain, and harvest at least five garden vegetable varieties according to acceptable gardening practices recommended by a county agricultural agent.

I. Select and Buy Seed

1. Identify seeds as very small, dormant plants with their own food supply and protective covering.

2. Identify sources for buying good and fairly priced seed.

3. Locate the directions for planting on the seed package.

4. Locate required information on seed package.

5. Distinguish treated seed from untreated seed.

6. Compare seed prices among seed distributors.

7. Compare the cost of seed which is commercially packaged to that bought from bulk suppliers.

8. List sources of free information about gardening.

II. Prepare the Seed Bed

1. Explain why soil must:
    a. allow plants to breathe
    b. provide food (chemical) for plant growth
    c. supply enough water for the plant, but not too much.

2. Take a soil sample.

3. Know where and how to have soil analyzed.

4. Determine if soil is dry enough to be worked.

5. Spade soil 6 to 7 inches deep.

6. Use rake to clean and level ground.

7. Break up all clods or clumps.

8. Sketch a garden plan on paper.

9. Mark off seed rows across the slope of the land according to an approved plan.

III. Apply Fertilizers

1. Identify and select proper mixtures of commercial fertilizer for soil needs.

2. Identify natural compost and manures.
3. Make a furrow for fertilizer where plant roots can reach it.
4. Mix the fertilizer with the soil.
5. Fill the furrow with soil.
6. Level the ground with a rake.
7. Allow adequate time for fertilizer to dissolve and be absorbed into soil.

IV. Plant the Seed

1. Identify the time and the order for planting common crops.
2. Determine proper spacing for seed rows.
3. Mark off seed rows with string.
4. Identify proper planting depth for each seed type.
5. Make planting furrow to proper depth.
6. Sow seeds as directed.
7. Cover seeds as directed.
8. Firm soil (tamp) if dry.
9. Sow seeds in hills if desirable.

V. Set Transplants

1. Identify time of day, kind of weather, and conditions of soil which are ideal for setting transplants.
2. Water soil in transplant container several hours before transplanting.
3. Mark off planting intervals.
4. Trowel out depression.
5. Take plant up carefully to prevent disturbing the roots.
6. Set plants slightly deeper than before in a hole large enough to take roots without cramping them.

7. Press soil firmly about the roots.
8. Water thoroughly and keep subsoil moist.
9. Shade plants if necessary.
10. Water with water-soluble fertilizer.
11. If using peat pots, set entire pot into ground.

VI. Thin

1. Identify proper thinning distance for common vegetables.
2. Identify proper time in plant growth circle for thinning.
3. Identify proper weather conditions for thinning.
4. Thin plants to proper distance.

VII. Cultivate and Weed

1. Identify times to cultivate and weed.
2. Distinguish weeds from vegetables.
3. Remove weeds before their first true leaves.
4. Determine if soil is too wet before cultivating.
5. Identify, use and maintain cultivating tools:
   a) hand hoes
   b) hand weeders
   c) hand cultivator
   d) wheel-hoe cultivator
   e) rotary tiller
6. Hand weed at proper intervals.

VIII. Water

1. Explain the need for consistent watering.
2. Explain the danger of frequent but insufficient watering.
3. Water thoroughly at least once each week.

IX. Insect and Disease Control

1. Identify sources of information for insect and disease control:

    a) University Extension worker
    b) County agent
    c) Agribusiness teacher
    d) Expert gardener
    e) Agricultural supply store salesman

2. Apply disease and insect control products as directed.

X. Harvest

1. Identify proper stage of maturity before harvesting common vegetables.

2. Pick produce without damaging plant.

3. Identify vegetables that can be reharvested.

4. Clean, prepare, and store common vegetables.

OPERATING LAWN AND GARDEN EQUIPMENT

Terminal Performance Objective:

Given prescribed lawn and garden equipment, instruction in their use, and appropriate practice with each item, the student will be able to operate all equipment items safely and according to practices recommended in operator's manuals.

I. Roto Tiller

1. Identify the roto tiller.

2. Check motor or gas and oil (fill if necessary).

3. Identify controls.

4. Start and stop roto tiller motor.

5. Start roto tiller and engage clutch.

6. Use to till old ground.

7. Use to till new ground.

8. Do basic maintenance (replace shear bolts).
9. Clean machine for storage.
10. Show ability to use roto tiller safely.

II. Power Mower

1. Identify mower.
2. Fill mower with fuel.
3. Adjust cutting height.
4. Adjust handle height.
5. Start and stop mower.
6. Clean air filter and replace.
7. Clean and set spark plug.
8. Clean exhaust ports.
9. Check blade (remove and replace).
10. Clean mower.
11. Store mower.

GREENHOUSE OPERATIONS

Terminal Performance Objective:

Given appropriate horticultural equipment, materials, and supplies, and instruction in plant propagation, the student will be able to grow and care for five tomato plants from their seed stage to final transplant stage. The plants should be judged vigorous and adequate for sale by a competent greenhouse operator at the conclusion of the project.

I. Soil Preparation

1. Describe the relationship of plants to soil.
    a) soil supports the plant
    b) soil contains the plant's food supplies (chemicals)
    c) soil contains the plant's water supply
    d) soil contains part of the plant's oxygen supply.

2. List and identify a few components of good plant soil.
    a) decayed or decaying organic matter
    b) water
    c) air
    d) chemicals
    e) microorganisms
    f) clay
    g) sand
    h) silt
    i) peat
    j) vermiculite or other inorganic additive
3. Explain why potting soil must be sterilized.
4. Assist in sterilizing soil using baking, steaming, or chemical method.
5. Make potting soil mixture consisting of 1/2 soil, 1/4 organic additive, and 1/4 inorganic additive.
6. Identify and select proper soil container, one with adequate drainage.
7. Explain where and how to have a soil sample tested for pH factor and general analysis.

II. Pot Rooted Cuttings

1. Select proper size and type of pot, one with adequate drainage.
    a) clay pot
    b) plastic pot
    c) fiber pot
2. Place piece of broken pot over drainage hole if pot is over 4 inches in diameter.
3. Place soil mixture in potter.
4. Grasp plant cutting in left hand and sift soil quickly around the roots.
5. Pack soil firmly around roots to proper height on stem.
6. Water thoroughly at first.
7. Water more sparingly later to allow proper root development.
8. After adequate root formation water as directed.

III. Fertilize Potted Plants

1. Identify and select some of the common fertilizer ingredients for potted plants.

    a) organic ingredients
        (1) dried blood
        (2) tankage
        (3) bone meal
        (4) sludges

    b) inorganic ingredients
        (1) nitrate of soda
        (2) ammonium sulfate
        (3) calcium nitrate
        (4) urea
        (5) ammonium nitrate
        (6) potassium nitrate
        (7) super phosphate
        (8) potassium sulfate
        (9) potassium chloride

2. Distinguish between dry and liquid fertilizers.

3. State dangers of using inappropriate fertilizers.

4. Describe why the numbers on fertilizer bags are important.

5. Apply dry fertilizers as directed.

6. Apply liquid fertilizers as directed.

IV. Water Potted Plants

1. Describe tests for determining amount of moisture in soil.

2. Describe why watering is important to plant growth.

3. Explain how to water thoroughly without compacting soil.

4. Water plants properly for a 4 week period.

V. Seed Propagation

1. Identify and select proper planting media.

    a) container
    b) sterilized soil mixture with proper fertilizer supply.
    c) temperature
    d) soil moisture

2. Describe a plan for retaining soil moisture.

3. Sow seed broadcast and cover as directed (or)

4. Sow seed to prescribed depth as directed.

5. Describe and maintain proper temperature, moisture, light, aeration, and drainage feeding for 2 weeks.

6. "Prick off" (transplant) when first true leaves are formed.

VI. Disease Control

1. Name two people who could give advice to persons suspecting disease in their plants.

2. Identify protective clothing to be worn when handling caustic materials.

3. Describe how to store poisonous materials safely.

BUILDING A LAWN

Terminal Performance Objective:

Given appropriate lawn and garden tools, materials, and supplies and instruction in building a lawn, the student will prepare, sow, and maintain a lawn of prescribed grasses on a 5' x 5' plot for a period of 3 months. The plot will be free of depressions, will have uniform grass growth, and be free of seeds and diseases.

I. Preliminary Grading and Drainage

1. Rough grade subsoil away from dwelling.

2. Eliminate any depressions.

3. Remove tree stumps or large roots and debris.

4. Place topsoil in separate piles.

5. Rake topsoil in uniform layer 4-6 inches deep.

II. Seedbed Preparation

1. Identify how and where to have pH test made.

2. Identify how pH is raised or lowered using additives.
3. Add lime (if needed) as directed.
4. Add fertilizers evenly as directed and mix thoroughly into soil.
5. Rake lightly.
6. Roll with 5 lb. water roller.

III. Seed

1. Score soil surface with rake.
2. Sow prescribed seed evenly.
3. Rake lightly to cover seed.
4. Roll with empty roller.
5. Mulch or cover with tobacco cloth.

IV. Care for New Lawn

1. Water new lawn lightly and frequently at first.
2. After seeds germinate during a 2 or 3 week period taper off watering intervals but increase amount of water.
3. Mow lawn after height of 3 inches has been attained.
4. Maintain lawn at 2 inch height.

LAWN MAINTENANCE

Terminal Performance Objective:

Given adequate lawn and garden tools and supplies and instruction in lawn maintenance, the student will be able to provide care and maintenance for a lawn plot of 15' x 15' for one growing season. All maintenance procedures will conform with recommendation of a competent nurseryman, horticultural extension worker, or county agent.

I. Identify people who are competent to give advice on lawn care.

a) county agent
b) nurseryman

    c) landscape contractor
    d) extension service horticulturalist

2. Identify common lawn problems.

    a) snow removal damage
    b) weeds
    c) diseases
    d) insects
    e) moles, mice, and other rodents
    f) moss
    g) shade
    h) depressions
    i) compaction

3. Renovate small patches of lawn.

    (Follow steps listed under building a new lawn)

4. Clear lawn of debris and dispose of debris.

5. Rake lawn and dispose of dead grass, leaves, etc.

II. Fertilizing

1. Use color of grass and rate of growth to determine if fertilizer is needed.

2. Identify source for buying proper fertilizer.

3. State safety precautions for handling fertilizer.

4. Apply fertilizer with spreader at rate recommended by competent gardener. (Usually 3-5 lb. nitrogen 1000 sq. ft. of turf)

5. State the best times for applying fertilizer

    a) early spring
    b) fall

6. Explain why fertilizing in summer is not a good practice.

III. Liming

1. State where and how to have a soil pH test made.

2. Apply light application of lime.

3. State when lime may be applied.
    - a) anytime
    - b) fall or winter best
4. State why sandy soil needs lime at closer intervals than clay soils.

IV. Watering

1. Explain why soils differ in amount of water they hold.
2. Describe the signs of grass wilt.
3. Apply water in sufficient quantity to soak to a depth of 6 inches or more.
4. Explain why light watering at frequent intervals may be harmful.

V. Mowing

1. Operate lawn mowing equipment
    - a) push reel mower
    - b) power reel mower
    - c) power rotary mower
2. Mow lawn to height of about 2 inches.
3. Mow frequently enough to eliminate need for raking.
4. Explain dangers of allowing grass to grow too long before mowing.
5. Keep cutting edge of mower sharp (explain who can sharpen the mower other than the student).

VI. Snow Thrower

1. Identify snow thrower.
2. Check and fill machine with gas and oil.
3. Start and stop machine.
4. Use clutch on machine.
5. Shift gears on machine.

6. Adjust direction of chute.
7. Put machine into motion (forward and reverse).
8. Control direction of machine travel.
9. Use machine to clean walks and driveways.
10. Use machine safely.
11. Clean machine before storage.
12. Can do basic emergency maintenance.
13. Store machine properly when finished.

PRUNING A SHADE TREEE

Terminal Performance Objective:

Given adequate home and garden tools and supplies and instruction in pruning a shade treee, the student will identify and prune a shade tree according to procedures recommended by a competent arborist, nurseryman, forester, or ornamental horticulturist.

I. Pruning Procedures

1. List three reasons why trees are pruned.
    a) health
    b) appearance
    c) safety
2. Describe ideal time to prune trees.
    a) generally in spring
    b) "heavy bleeders" should be pruned in summer
3. Identify and use pruning equipment.
    a) pruning saw
    b) hand clippers (loppers)
    c) pruning shears
    d) brush, paint pot and wound dressing
4. Study tree to determine where pruning is needed.
5. Cut small branches above outside bud or fork.

6. Stub cut all larger branches to prevent ripping or tearing.

7. Saw off stub leaving only a small ledge.

8. Smooth with chisel if needed.

9. Make wounds elliptical to promote faster healing.

10. Explain why it is harmful to leave stubs.

11. Prune branches with narrow angles.

12. Remove old stubs.

13. Remove suckers (water spouts) when excessive.

14. Name two people who can give expert advise on pruning.

15. Cover cuts which are over an inch in diameter with a commercial sealing compound.

16. Treat all bark wounds.

CORRECTING A LAWN DEPRESSION

Terminal Performance Objective:

Given adequate lawn and garden tools and supplies and instruction in eliminating a ground depression, the student will be able to correct a ground depression of at least 2' x 2' in an area with adequate turf growth to remove sod. The depression will be eliminated and pieces of sod restored to normal appearance within 4 weeks after project is completed.

I. Preparation for Operation.

1. Identify and use:

a) wheelbarrow
b) pounding stick
c) rounded shovel (8 inch blade)
d) sod cutter
e) guy line and metal pegs
f) iron rake
g) tarpaulin
h) garden hose

  - i) heavy duty bottom
  - j) storage area for each item listed above
  - k) safety precautions for using each item above

2. Organize tools neatly for transporting.
3. Safely transport tools to working area.
4. Put pegs in corners of depression to form square or rectangle.
5. Run a taut guy line from pegs to form lines enclosing depression.
6. Use guy lines to cut out sod blocks.
7. Pry blocks loose using shovel or sod cutter.
8. Pick up blocks and place blocks neatly and uniformly on tarp.
9. Dampen each tier of sod blocks as it is placed on tarpaulin.
10. Place tarpaulin over completed pile of sod blocks.
11. Force soil into any cavities by puncturing soil above cavity.
12. Tamp soil in depressed area.
13. Locate and transport fill to working area.
14. Distribute fill according to depth of depression.
15. Tamp fill.
16. Level fill with rake.
17. Sweep any spilled soil from turf that surrounds working area.
18. Replace sod blocks in same pattern as removed.
19. Tamp or roll sod blocks uniformly.
20. Check for proper leveling.
21. Make adjustment to correct faulty leveling.
22. Water replaced turf thoroughly.

23. Clean all tools and equipment.

24. Return tools and equipment to storage area.

TRANSPORTING SHADE TREES

Terminal Performance Objective:

Given prescribed lawn and garden tools and materials and instruction and appropriate practice in transplanting a shade tree, the student will be able to transplant a tree of 1" to 3" in diameter according to acceptable nursery practices.

I. Prepare Tree for Moving

1. Explain the precautions to be taken to prevent injury to the tree.

2. Select tree adequate for transplanting.

3. Use a compass to mark northern orientation of one branch of tree to assure correct reorientation of tree.

4. Tie in branches of bushy plants with twine or burlap strips.

5. Determine if tree is deciduous or coniferous.

6. Determine amount of root system needed for transplant.

7. Dig a trench around the roots allowing 6" for each 1" of diameter to a depth of 12" to 18".

Deciduous

8. Remove some of the soil from around the roots.

9. Keep root injury to minimum.

10. Tip tree gradually but avoid breaking roots or loosening bark.

11. Cut anchor root or tap root at a depth of 14" to 18".

12. Grasp tree at junction of roots and trunk.

13. Pack exposed roots in moisture-holding material (straw, sawdust, etc.)

14. Wrap in burlap.

Conifer

15. Determine amount of root system needed for transplant. (Evergreens 2' tall need a ball 12" in diameter. For each additional 1' up to 10' the ball diameter is increased 1 1/2".)

16. Remove any loose soil above roots before digging.

17. Spade circle around plant about 6" beyond anticipated diameter of finished ball.

18. Cut the roots to a depth of about 12".

19. Dig trench outside marked circle to 10"-16".

20. Trim ball to size and shape with spade (taper ball in toward base).

21. Cut small and large roots protruding from ball with shears.

22. Undercut the ball on 45° andle.

23. Wrap ball tightly with burlap.

24. Describe and practice safety procedures in lifting ball to transportation source.

25. Keep roots moist during transportation.

II. Planting Procedures

1. Describe features of a suitable planting location.

    a) proper soil type
    b) adequate drainage
    c) proper soil fertility
    d) adequate moisture
    e) adequate sunshine
    f) room for growth

2. Identify and use tools and supplies.

    a) lime
    b) fertilizer
    c) peat
    d) nursery spade
    e) hoe
    f) watering can (or garden hose)
    g) pruning shear

3. Transport materials safely.

4. Measure and record dimensions of soil ball.

5. Mark out rough dimensions for planting hole.

6. Dig planting hole to height of soil ball plus 2"-4" with diameter equal to soil ball diameter plus 6"-8".

7. Provide drainage in poorly drained soil.

8. Add peat to back fill (soil removed from hole that will go back into the hole at planting time) in proportions of 1/4 peat, 3/4 back fill.

9. Mix in 20% superphosphate at rate of 1/2 cup per bushel of backfill.

10. Remove treated burlap from soil ball.

11. Set soil ball into hole so that tree is just below surface break.

12. Center tree and orient tree to have same exposure as before it was dug.

13. Place backfill around roots and pack firmly.

14. Make watering dam (ridge) around tree with remaining backfill.

15. Saturate soil mixture and planting area.

16. Prune to remove 15% to 35% of leaf-bearing wood to compensate for root loss.

17. Remove injured, weak and poorly located branches.

18. Brace trees of 1' diameter or more using

    a) single stake and guy
    b) double stakes
    c) triple stakes
    d) three-way guys
    e) four-way guys

19. Protect guy wires with piece of hose.

20. Wrap trunk in tree-wrapping crepe paper, burlap, or 40 lb. Kraft wrapping paper.

21. Continue to water tree every 7-10 days during dry seasons.

FERTILIZING SHADE AND ORNAMENTAL TREES

Terminal Performance Objective:

Given lawn and gardening tools, materials, and supplies and instruction in feeding a tree, the student will identify and feed a tree showing deficits in fertilizer. The feeding will correspond to procedures suggested by a competent nursery operator or aborist.

I. Determine Need for Feeding

1. Identify characteristics of a healthy tree.

2. Determine rate of annual growth from bud scale scars.

3. Identify where and how to have soil conditions analyzed.

4. Identify sources of information for rate and time of fertilizer application.

5. Identify symptons that indicate a tree needs feeding.

II. Surface Feeding

1. Determine if tree is 10 years old or less.

2. Identify person who recommends proper fertilizer analysis.

3. Identify and select proper equipment and supplies.

   a) wheel barrow
   b) crowbar
   c) nursery spade
   d) funnel
   e) work gloves
   f) lime
   g) peat
   h) fertilizer

4. Transplant materials and supplies in appropriate containers to work area.

5. Determine and mark location of feeding roots.

6. Apply lime in circle corresponding to feeding area (if pH factor indicates need for lime).
7. Make feeding holes in prescribed pattern and depth using crowbar, auger, or punch bar.
8. Handle fertilizer according to acceptable safety standards.
9. Mix fertilizer and peat in a 1 part to 20 part ratio.
10. Fill feeding holes with mixture.
11. After filling holes, broadcast excess mixture over feeding area.
12. Clean and store all equipment and supplies as directed.
13. Inventory expendable supplies before storing.

HOME CARE AND CUSTODIAL SKILLS

Very few people relish the idea of housework. Housework is a fact of life, however. In fact, learning how to perform these tasks with minimum effort and maximum efficiency can be a rewarding experience that pays big dividends. Many disadvantaged and handicapped students come from homes where cleanliness is not highly regarded. Considerable insight will be needed to convey the benefits of cleanliness to those who have learned to accept less.

Motivational Projects

1. Take a field trip to observe custodial cleaning of public buildings.
2. Invite a prospective employer to talk with youngsters about qualifications for custodial employment.
3. Schedule free time for students to observe and interact with school custodian.
4. Arrange for on-the-job-training at such establishments as: libraries, hospitals, nursing holes and factories.
5. Record interview with custodian.

Resource Materials

Film Strips

"The Maid: Cleaning the Bathroom" (H201)
"The Maid: Making Up the Room"(H202)
from: National Educational Media Inc.
15251 Ventura Boulevard
Sherman Oaks, Cal. 19403

HOME CARE AND CUSTODIAL SKILLS

BOOKS

Adkins, J. How a house happens. 720 Fifth Avenue, New York, New York 10019: Walker Publishing Company, 1972.

TEXTS/WORKBOOKS

Avery, B. House helps. 248 East Main Street, Alhambra, California 91801: California Literacy, Inc., 1969.

Avery, B. Can Ann do it? (sequel to House Helps). 248 East Main Street, Alhambra, California 91801: California Literacy, Inc., 1969.

House keeping directions - A simplified guide. 475 Park Avenue, So. at 32nd Street, New York, New York 10022: The Soap and Detergent Association.

Pfeiffer, W. P., & Voegele, W. O. The correct maid. Rochelle Park, New Jersey: Hayden Book Co., Inc.

Prevo, H. Happy house keepers. 324 First Street, Liverpool, New York 13088: Frank E. Richards Publishing Co., Inc.

PAMPHLETS

Source: Consumer Education Center, Golden Rondelle, 14th and Franklin Street, Racine, Wisconsin.

Floor care.
Furniture care.

Source: Consumer Information, Public Documents Distribution Center, Pueblo, Colorado 81009.

Floor polish and floor care.

FILMSTRIPS & FILMS

Source: National Educational Media, Inc., 15251 Ventura Boulevard, Sherman Oaks, California 91403.

The maid--Cleaning the bathroom (H201)
The maid--Making up the room (H202)

Source: International Film Bureau, Inc., 323 South Michigan, Chicago, Illinois 60604.

Old task, new plan.

KITS

Source: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (1966).

FES Packet C Low income teaching kit on a clean house.
FES Packet E Low income teaching kit on a clean house.

Source: Restaurant-Hotel Aids, 2120 Girard Avenue South, Minneapolis, Minnesota 55405.

Cleaning restrooms self training kit.

"Old Task, New Plan"
from: International Film Bureau Inc.
323 South Michigan
Chicago, Illinois 60604

Free Booklets and Pamphlets

Floor Care

Furniture Care
from: Consumer Education Center
Golden Rondelle
14th and Franklin Street
Racine, Wisconsin 53403

What to do about Homework by Faith Prior
from: University of Vermont Extension Service
Brieflet No. 1094

Floor Polish and Floor Care
from: Consumer Information - Public Documents
Distribution Center
Pueblo, Colorado 81009

Wookbook

Happy Housekeepers by Helen Prevo
Order No. 142.
from: Frank E. Richards Publishing Co. Inc.
324 First Street
Liverpool, New York 13088

Cost: Paper cover: $1.50

CLEANING AND CUSTODIAL TRAINING

Terminal Performance Objective:

After completing prescribed instructional activities, the student when provided with the necessary cleaning and polishing supplies and equipment, will clean walls and ceilings, sweep, dust, mop, or vacuum floors, clean windows, mirrors, drapes, woodwork, dust, straighten and polish furniture and other household furnishings. He will clean bathroom area and fixtures using appropriate amounts of cleansing agents, operate and store equipment and produce a clean, neat room.

I. Procedure for General Dusting

1. Identify and select the following equipment:

   treated dust cloth
   treated hand duster
   whisk broom
   lint brush
   wall duster and extension.

2. Proceed to area with tools and materials.

3. Fold dusting cloth.

4. Dust furniture.

   a) begin with high furniture and work down to low furnishings
   b) use straight overlapping strokes
   c) stroke should cover length of surfaces

5. Refold cloth using proper motion when side used becomes dust filled.

6. Move objects on furniture to dust under them.

   a) slide heavy non-marking objects
   b) raise light objects and replace while cleaning

7. Continue dusting routine until completed.

8. Store cleaning equipment appropriately.

II. Procedure for Classroom Dusting

1. Identify and select dust mop.

2. Carry mops from place to place.

   a) handle vertical to floor
   b) head of mop about 8" from floor
   c) head parallel to stride

3. Position on floor for sweeping

   a) yarn down and spread flat
   b) head of mop resting on floor

4. Grasp handle with both hands.
    a) power hand cupped over end
    b) guiding hand underneath handle at arm's length, palm up

5. Hold handle loosely - permits handlt to slide freely through guiding hand.

6. Start dust mopping floors, walking forward.
    a) keep mop head flat on floor with strain spread evenly
    b) use a push stroke
    c) do not life mop from floor except for shaking

7. Pivot and mop in opposite direction at end of path.
    a) make a slight overlap
    b) apply only enough pressure on mop to retain debris and dust
    c) keep piles of dust and debris small
    d) use care in mopping along baseboards under wires and long doors
    e) use counter brush in hard-to-get-at areas

8. Mop carefully under stationary equipment which has legs.

9. Move all rolling or movable equipment or furniture as it is approached.

10. Return equipment or furniture to original position before leaving that area.

11. Shake mop as necessary (lightly over dusted area).

12. Remove gum or other matter with putty knife.
    a) pry the material loose gently, working around edges
    b) use care not to gouge floor

13. Pick up piles of debris and dust with counter brush and dust pan and deposit in pick-up receptacle.

14. Clean dust mop before beginning next area or before storing. Use stiff brush, or vacuum.

15. Clean and store equipment (except when this procedure is to be continued immediately in another area).

16. Complete the above with reasonable speed.

IV. Dry Clean Stairways

1. Identify and select the following equipment:

    counter brush
    dust pan
    putty knife
    dust cloth or hand duster
    dust mop

2. Proceed to area with tools and materails.

3. Sweep treads.

    a) use counter brush
    b) start at top of stairway
    c) stand three steps below tread being swept

4. Place dust pan one step below work area.

    a) on extra wide or open stairs, set pan in middle of tread
    b) on stairs open one one side or closed place pan in corner

5. Pull soil from one corner.

6. Sweep lengthwise to opposite corner.

7. Pull soil from this corner into dust pan (on extra wise stairs sweep from both sides to center).

8. Do two treads, then move down two steps.

9. Repeat steps Nos. 5-8.

    a) follow this routine until all stairs are cleaned
    b) include landings

10. Empty dust pan into dust receptacle.

11. Clean and store equipment.

V. Wet Mop Stairways

1. Identify and select the following:

   wet mop
   mop bucket and wringer
   cloths or sponge (2)
   neutral cleaner
   hand scrub brush
   buckets (2)

2. Mix cleaning solution.

   a) fill buckets with hot water
   b) add cleaning solution according to directions
   c) attach winger

3. Proceed to area with tools and materials.

4. Sweep stairway to remove excess dust and debris.

5. Set mop bucket on landing.

6. Churn mop in solution.

7. Wring mop to remove excess solution.

8. Stand two steps below tread which is to be mopped.

9. Grasp mop strands with hand nearest starting corner (hold mop handle up with other hand).

10. Clean corner of tread (with mop strands in hand).

11. Mop lengthwise to opposite side.

12. Keep handle up and clean corner (with mop strands in hand).

13. Turn mop over and place on next lowest step.

14. Clean corner by hand.

15. Mop lengthwise to opposite side.

16. Clean corner by hand.

17. Move down two steps.

18. Continue routine by cleaning two treads at a time until stairway and landings are completed.

19. Rinse out mop and bucket before storing.

20. Return and store equipment (except when this procedure is to be continued immediately in another area).

VI. Clean the Classroom

1. Turn on all lights.
2. Erase chalkboard (clean eraser).
3. Clean chalk tray (dry cloth, sponge and plain water).
4. Empty wastebasket.
5. Wash and polish desks, chairs, and counter tops (mild soap).
6. Wash and clean doors and pencil sharpener area.
7. Dust all projections, ledges and behind doors.
8. Spot clean walls.
9. Clean and polish brightware.
10. Clean and polish sink and dispenser.
11. Clean and polish intercom, clock, door, and glass.
12. Vacuum clean rug.
13. Turn off lights.
14. Return equipment.
15. Work with reasonable speed and efficiency.

VII. Floor Scrubber

1. Identify scrubber.
2. Set up scrubber.
3. Move scrubber properly.

4. Select proper brushes.
5. Select proper pads.
6. Attach pad to brush.
7. Stand machine.
8. Leave machine on side when not in use.
9. Adjust handle height.
10. Operate machine.
11. Start and stop.
12. Demonstrate:
    a) right movement
    b) left movement
    c) forward movement
    d) backward movement
13. Control machine.
14. Clean up.
15. Clean machine.
16. Dry machine.
17. Move and store properly.
18. Complete the above tasks accurately.

VIII. Clean the Restroom (Bathroom)

1. Get supply cart and stock with proper supplies.
2. Get work area assignments.
3. Leave cart in doorway so tnat it is visible from hallway.
4. Sprinkle cleanset in soap dishes and lavatories.
5. Apply bowl and urinal solution to toilet areas.
6. Wash down and rinse solution from toilet areas.

7. Wash and dry toilet seat.
8. Clean and polish lavatories.
9. Wipe and polish urinal sides, bottom, and top.
10. Empty trash and sanitary napkin disposals.
11. Check dispensers, fill if necessary.
    a) towels
    b) toilet tissue
    c) sanitary napkins
    d) soap
12. Wipe and dust areas where dust collects.
13. Clean and polish chrome and bright fixtures.
14. Clean and polish mirrors and glass.
15. Spot clean walls, doors, and partitions.
16. Sweep floors, remove gum, tar, obvious black marks, etc.
17. Mop floors, starting in toilet areas and working around room and out of the door.
18. Work with reasonable speed and efficiency.

IX. Floor Finishing, Sealer, Wax

1. Strip floor of old finish.
2. Dry floor.
3. Sweep floor.
4. Dry mop floor.
5. Identify sealer.
6. Select applicator.
7. Select a container to hold sealer.
8. Apply sealer to floor one tile at a time.
9. Allow to dry.

10. Apply second coat sealer in opposite direction of first coat.
11. Allow to dry.
12. Dispose of unused sealer.
13. Clean applicator and container.
14. Store applicator and container.
15. Identify wax.
16. Select wax applicator.
17. Select container to hold wax.
18. Apply wax, in opposite direction of sealer.
19. Allow to dry.
20. Buff if necessary.
21. Dust mop.
22. Apply second coat wax.
23. Allow to dry.
24. Buff.
25. Dust mop.
26. Dispose of unused wax.
27. Clean wax applicator.
28. Store applicator and container.
29. Exercise judgement in selection of methods and materials.
30. Complete task efficiently.

X. Floor Stripping

1. Prepare the following items:

    a) floor scrubber
    b) wet-vac

    c) room (remove all furniture properly)
    d) bucket and mop
    e) stripping soap and water

2. Apply stripper solution to floor.

3. Allow solution to work in (this usually requires 5-10 minutes).

4. Scrub floor.

    a) work away from power supply
    b) box-in finish
    c) finish one room, from side to side moving forward one tile at a time

5. Check to see that all wax is off floor.

6. Remove stripping solution with wet-vac.

7. Rinse and remove a second time.

8. Wipe mop boards and spatter marks from walls.

9. Allow floor to dry.

10. Clean equipment.

11. Complete the above tasks adequately under supervision.

12. Meet the above requirements independently.

XI. Cleaning Implements

1. Identify and demonstrate correct use of a broom.

2. Explain features to consider when buying a broom.

    a) size
    b) type of fiber
    c) few split ends
    d) lighter weight brooms more satisfactory for household use

3. Explain proper care of broom.

    a) store by hanging free of the floor.
    b) store by resting on end of handle.

4. Identify 5 kinds of brushes.

   a) scrub brushes
   b) floor scrub brushes
   c) wall brushes
   d) wall brushes
   e) toilet bowl brushes
   f) upholstery brushes

5. Identify and demonstrate correct use of scrub brush.

6. State what to look for when buying a scrub brush.

   a) long handles
   b) durable fiber

7. Identify and demonstrate correct use of scrub brush.

8. State what to look for when buying floor scrub brush.

   a) grade A horsehair is the best
   b) changeable handles

9. Identify and demonstrate correct use of wall brush.

10. State what to look for when buying a wall brush.

    a) soft
    b) full and fluffy
    c) handle in flexible spring socket

11. Identify and demonstrate correct use of toilet-bowl brush.

12. State what to look for when buying toilet-bowl brush:

    a) stiff bristles are best
    b) Tampico fibers are cheaper
    c) rustless wire which is twisted in circular or ball shape

13. Identify upholstery brush and demonstrate correct use.

14. Select upholstery brush.

    a) consider fabric to be cleaned
    b) bristle for strong fabrics
    c) soft brush is desirable

15. Identify and demonstrate correct use of a carpet sweeper.

    a) hand operated
    b) used for removing surface dirt from rugs and over carpets
    c) push sweeper back and forth with smooth even strokes

16. Explain features to consider when buying a carpet sweeper.

    a) automatic brush setting device
    b) rubber bumper around edge to protect furniture
    c) removable cleaning combs
    d) ease of emptying pans

17. Explain care of sweeper.

    a) keep sweeper brushes clean
    b) empty dust pans after each use

18. Identify the major parts of vacuum cleaner.

    a) motor casing
    b) filter bag
    c) extension tubes
    d) tube lock connectors
    e) drapery brush
    f) brush for cleaning bare floors
    g) rug brush or mechanism to switch brush from carpets to bare floors
    h) dusting brush
    i) crevice tool
    j) controls (on/off)
    k) electric cord
    l) hose
    m) carrying handle
    n) opening mechanism to reach bag
    o) other attachments

19. Demonstrate use of vacuum cleaner.

    a) connect hoses and brushes to vacuum
    b) use 4 different kinds of brushes
    c) clean bare floors
    d) clean carpets

20. Explain care and storage of vacuum cleaner.
    a) change filter bag at proper time
    b) store brushes in appropriate place on vacuum cleaner

21. Refrain from running vacuum in wet area.

22. Store vacuum in accessible spot.

23. Select from catalogs appropriate equipment for completing this unit.

24. Demonstrate efficiency in workmanship.